THE AMERICAN JOURNAL of PSYCHIATRY

VOLUME 112
NUMBER 11
MAY 1956

Official Organ of
THE AMERICAN PSYCHIATRIC ASSOCIATION

1956 Annual Meeting, Hotel Morrison, Chicago, Illinois, April 30–May 4, 1956

THE AMERICAN JOURNAL OF PSYCHIATRY

VOLUME 112 MAY 1956 No. 11

Published by
THE AMERICAN PSYCHIATRIC ASSOCIATION
1601 EDISON HIGHWAY, BALTIMORE 13, MD.

AMERICAN JOURNAL OF PSYCHIATRY

INFORMATION FOR CONTRIBUTORS

Manuscripts—The *original* manuscripts of papers read at the annual meetings of the Association should be deposited with the Secretary during the meetings, or sent to the New York office promptly afterward. Do not deposit carbon copies.

Papers read at the annual meetings become the property of the Association. Not all papers read, however, can be published in the JOURNAL, and authors wishing to publish in other vehicles will first secure from the Editor the release of their manuscripts.

Papers will not be accepted for the annual program if they have been previously read at other meetings or if they have been already published.

Papers contributed during the year (not on the annual program) should be sent to the Editor, Dr. Clarence B. Farrar, 216 St. Clair Avenue West, Toronto 5, Ontario, Canada.

Style—Manuscripts should be typewritten, double spaced, on one side of paper. They must be prepared in conformity with the general style of The American Journal of Psychiatry. Retain a carbon copy of manuscript and duplicates of tables, figures, etc., for use should the originals be lost in the mails.

Multiple Authorship—The number of names listed as authors should be kept to a minimum, others collaborating being shown in a footnote.

Illustrations—Authors will be asked to meet printer's costs of reproducing illustrative material. Copy for illustrations cannot be accepted unless properly prepared for reproductions. Wherever possible, drawings and charts should be made with India ink for photographic reproduction as zinc etchings. Photographs for halftone reproduction should be glossy prints. Illustrations should be as small as possible without sacrificing important detail. Redrawing or preparing illustrations to make them suitable for photographic reproduction will be charged to author.

Authors' Corrections in Proofs—Corrections, additions or deletions made by authors are to be charged to them. These alterations are charged on a time basis at the rate of $3.00 per hour. Proper editing of original manuscript is important to avoid the expense of correction.

Tables—Tables should be typed and on separate sheets. Tables are much more expensive to set than text material and should be used only where necessary to clarify important points. Authors will be asked to defray cost of excessive tabular material.

References—References should be assembled according to author in a terminal bibliography, referred to in text by numbers in parentheses. Bibliographical material should be typed in accordance with the following style for journals and books respectively:

1. Vander Veer, A. H., and Reese, H. H. Am. J. Psychiat., 95: 271, Sept. 1938.
2. Hess, W. R. Diencephalon. New York: Grune & Stratton, 1954.

Abbreviations should conform to the style used in the Quarterly Cumulative Index Medicus.

The American Journal of Psychiatry, formerly The American Journal of Insanity, the official organ of The American Psychiatric Association, was founded in 1844. It is published monthly, the volumes beginning with the July number.

The subscription rates are $12.00 to the volume: Canadian subscriptions, $12.50; foreign subscriptions, $13.00, including postage. Rates to medical students, junior and senior internes, residents in training during their first, second, or third training year, and also to graduate students in psychology, psychiatric social work, and psychiatric nursing, $5.00 (Canada $5.50). Single issues, $1.25.

Office of Publication, 1601 Edison Highway, Baltimore 13, Md.

Editorial communications, books for review, and exchanges should be addressed to the Editor, Dr. Clarence B. Farrar, 216 St. Clair Avenue West, Toronto 5, Ontario, Canada.

Business communications, remittances and subscriptions should be addressed to The American Psychiatric Association, 1601 Edison Highway, Baltimore 13, Md., or to 1270 Avenue of the Americas, New York 20, N. Y.

Entered as second class matter July 31, 1911, at the post office at Baltimore, Maryland, under the Act of March 3, 1879. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917. Authorized on July 3, 1918.

MAY CONTENTS 1956

THE AMERICAN PSYCHIATRIC ASSOCIATION

OFFICERS 1955–1956

President: R. Finley Gayle, Jr., M. D. — *President-Elect:* Francis J. Braceland
Secretary: William Malamud, M. D. — *Treasurer:* Jack R. Ewalt, M. D.

COUNCILLORS

For 3 years	For 2 years	For 1 year
Herbert S. Gaskill, M. D.	Douglas W. Orr, M. D.	Maurice Levine, M. D.
Harvey J. Tompkins, M. D.	George N. Raines, M. D.	Paul L. Schroeder, M. D.
S. Bernard Wortis, M. D.	Raymond W. Waggoner, M. D.	S. Spafford Ackerly, M. D
Arthur P. Noyes, M. D	Kenneth E. Appel, M. D.	D. Ewen Cameron, M. D.

EXECUTIVE COMMITTEE

R. Finley Gayle, Jr., M. D.
Harvey J. Tompkins, M. D.
William Malamud, M. D.
Jack R. Ewalt, M. D.
D. Ewen Cameron, M. D.
Francis J. Braceland, M. D.

ASSEMBLY OF DISTRICT BRANCHES

Addison M. Duval (Speaker) — Matthew Ross (Deputy Speaker) — John R. Saunders (Recorder)

MEDICAL DIRECTOR

Daniel Blain, M. D., 1785 Massachusetts Avenue, N. W., Washington, D. C.

EXECUTIVE ASSISTANT

Austin M. Davies, Ph. B., 1270 Avenue of the Americas, New York 20, N. Y.

CHAIRMEN OF COMMITTEES

ANNUAL COMMITTEES

Arrangements
Paul E. Nielson

Nominating
David C. Wilson

STANDING COMMITTEES
(Internal Activities of Association)

Budget
Robert H. Felix

Constitution and By-Laws
Henry Davidson

Ethics
S. Spafford Ackerly

Membership
Joseph E. Barrett

Program
Titus Harris

Resolutions
James H. Wall

STANDING COMMITTEES
(Technical Aspects)
Frank J. Curran, Coordinating Chairman

Child Psychiatry
George E. Gardner

History of Psychiatry
Robert S. Bookhammer

Medical Education
Milton Rosenbaum

Medical Rehabilitation
Benjamin Simon

Public Health
Charles A. Roberts

Research
Jacques Gottlieb

Therapy
Paul Hoch

STANDING COMMITTEES
(Professional Standards)
Wilfred Bloomberg Coordinating Chairman

Relations with Psychology
Paul Huston

Legal Aspects of Psychiatry
Gregory Zilboorg

Nomenclature and Statistics
Moses Frohlich

Psychiatric Hospital Standards and Policies
Harvey Tompkins

Psychiatric Nursing
Granville Jones

Psychiatric Social Service
Benjamin Boshes

Private Practice
John M. Cotton

STANDING COMMITTEES
(Community Aspects)
William C. Menninger, Coordinating Chairman

Academic Education
Dana Farnsworth

Industrial Psychiatry
Ralph T. Collins

International Relations
Iago Galdston

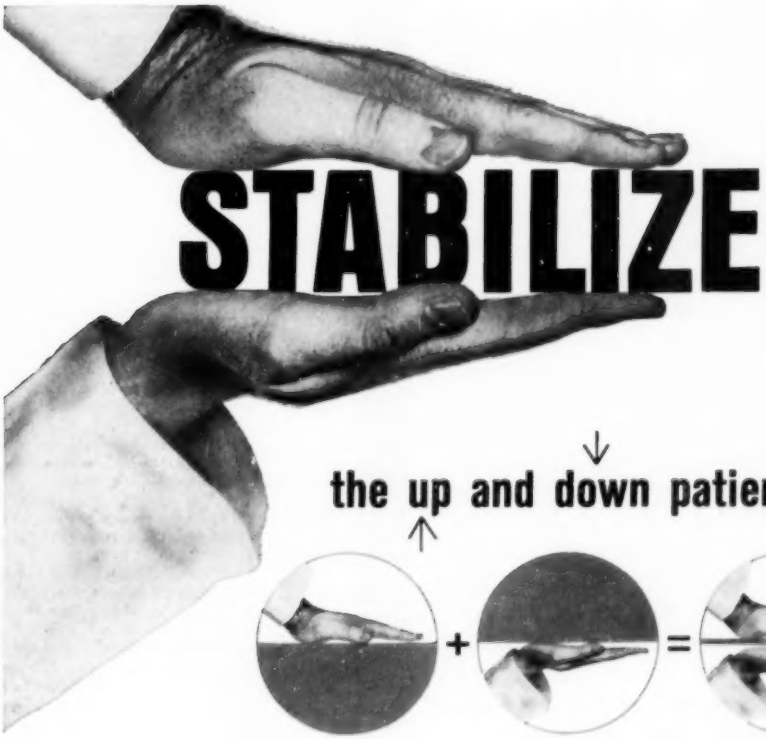
Cooperation with Leisure Time Agencies
Alexander R. Martin

National Defense
Joseph S. Skobba

Preventive Psychiatry
Lloyd J. Thompson

Public Information
Robert Morse

Veterans
David J. Flicker



the up and down patient

Serpasil *tranquilizer*

Ritalin *psychomotor stimulant*

Serpatilin *emotional stabilizer*

To induce emotional equilibrium in those who swing from anxiety to depression, Serpatilin combines the relaxing, tranquilizing action of Serpasil with the mild mood-lifting effect of the new cortical stimulant, Ritalin. In recent months, numerous clinical studies have indicated the value of combining these agents for the treatment of various disorders marked by tension, nervousness, anxiety, apathy, irritability and depression. Arnoff,[1] in a study of 51 patients, found the combination of definite value in a variety of complaints, noting no effect on blood pressure or heart rate. Lazarte and Petersen[2] also found Serpatilin effective in counteracting the side effects of reserpine and chlorpromazine. They reported: "The stimulating effect of Ritalin seemed complementary to the action of reserpine . . . in that it brought forth a better quality of increased psychomotor activity."

1. Arnoff, B.: Personal communication. 2. Lazarte, J. A., and Petersen, M.C.: Personal communication.

Serpatilin Tablets, 0.1 mg./10 mg., each containing 0.1 mg. Serpasil® (reserpine CIBA) and 10 mg. Ritalin® hydrochloride (methyl-phenidylacetate hydrochloride CIBA).

Dosage: 1 tablet b.i.d. or t.i.d., adjusted to the individual.

CIBA
SUMMIT, N. J.

Serpatilin T.M.

(reserpine and methyl-phenidylacetate hydrochloride CIBA)

In many patients, blocks acute schizophrenic hallucinations

FRENQUEL—a unique new drug—"...offers a new neuropharmacologic approach to certain acute psychotic states where delusions and hallucinations have been the primary symptoms."[1]

Used in the treatment of acute schizophrenic hallucinations, FRENQUEL usually erases hostile manifestations, promotes a cooperative state, facilitates psychotherapy and ward adjustment.[2] Adjunctively in electroconvulsive therapy, FRENQUEL may help reduce the required number of treatments.[3]

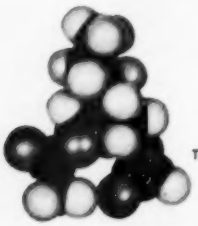
FRENQUEL is safe, virtually free of toxicity; has shown no tolerance or habituation to date.

Frenquel

AZACYCLONOL HYDROCHLORIDE

a significant contribution to the control of mental illness from the research laboratories of

Merrell
Since 1828



THE MILTOWN MOLECULE

Two articles in the April 30th issue of The Journal of the AMA[1,2] report on . . .

an entirely new type of tranquilizer with muscle relaxant action—orally effective in

ANXIETY, TENSION and MENTAL STRESS

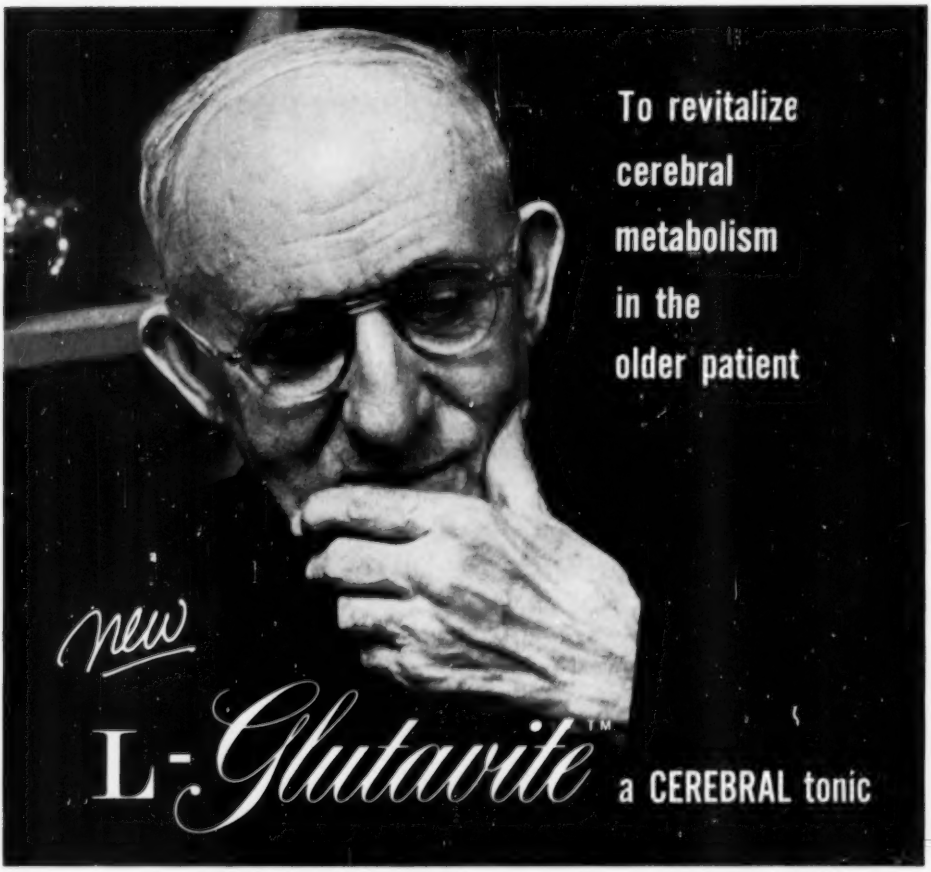
- no autonomic side effects—well tolerated
- selectively affects the thalamus
- not related to reserpine or other tranquilizers
- not habit forming, effective within 30 minutes for a period of 6 hours
- supplied in 400 mg. tablets. Usual dose: 1 or 2 tablets—3 times a day

1. Selling, L. S.: J.A.M.A. **157**: 1594, 1955. 2. Borrus, J. C.: J.A.M.A. **157**: 1596, 1955.

Miltown®

the original meprobamate—2-methyl-2-n-propyl-1,3-propanediol dicarbamate—U. S. Patent 2,724,720

DISCOVERED AND INTRODUCED by Wallace Laboratories, New Brunswick, N. J.
Literature and Samples Available On Request



L-Glutavite is specifically formulated to assist in the treatment of geriatric patients whose symptoms of weakness, apathy and fatigue are characteristic of waning cerebral metabolism. Himwich[1] reports excellent results with sodium glutamate in such cases, while Lehmann states that "a trial with nicotinic acid is always indicated . . ."[2] By combining these key factors with other vital nutritional elements, L-Glutavite effectively increases cerebral blood flow while it enhances the ability of cerebral tissue to utilize the increased nutrients provided. This unique therapeutic formula helps the tired, the apathetic, the depressed individual to face life more actively, and with greater interest.

Supplied in cartons of 30 individual dosage packets; initial dose, 3-5 packets per day for 5 to 6 weeks. Pleasant-tasting appetite-stimulating powder, to be mixed in vegetable juices or sprinkled on food. Contains monosodium L-glutamate, niacin, thiamine, riboflavin, ascorbic acid, ferrous sulfate and dicalcium phosphate, in high potencies.

1. Himwich H.E.: Paper presented at American Psychiatric Association meeting, St. Louis, May, 1954.
2. Lehmann, H.: 27th Annual Conference, Milbank Memorial Fund, New York, Paul B. Hoeber, Inc., 1952, p. 587.

GRAY PHARMACEUTICAL CO., INC., Newton 58, Massachusetts

surrounded by a monotonous routine of daily problems,

FROM CONFUSION to a normal behavior pattern

NICOZOL
relieves mental confusion and deterioration, mild memory defects and abnormal behavior patterns.

NICOZOL® for senile psychoses

REHABILITATION and RELEASE
from public and private psychiatric institutions for the mildly confused and mildly deteriorated aged patients may be accomplished by treatment with the NICOZOL formula.[1-2-3]

NICOZOL IS SUPPLIED
in capsule and elixir forms.
Each capsule or ½ teaspoonful of elixir contains:
Pentylenetetrazol —— 100 mg.
Nicotinic acid —— 50 mg.

1. Levy, S. J.A.M.A. 153:1260, 1953.
2. Thompson, Lloyd & Proctor, Rich. N.C. State, Dec. '54.
3. Thompson, Lloyd & Proctor, Rich. Clinical Medicine, '56

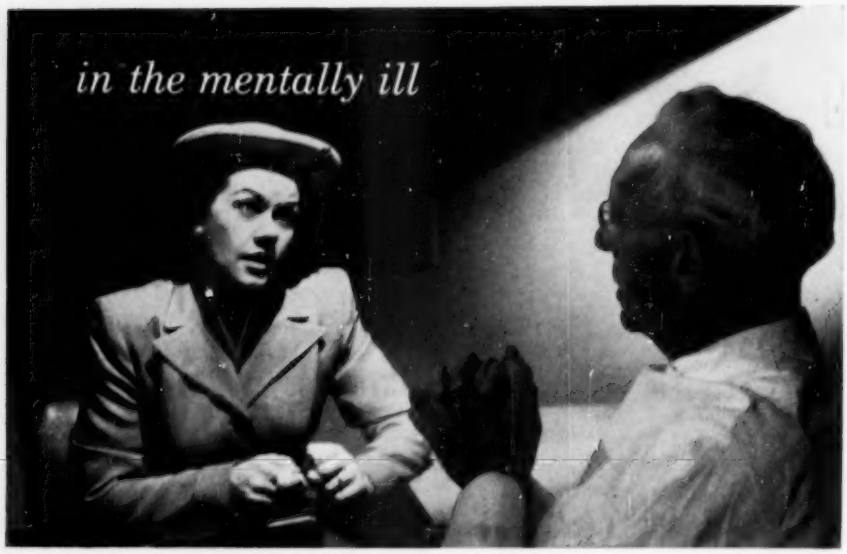
Mail Coupon for Free NICOZOL®
Drug Specialties, Inc.
P. O. Box 830, Winston-Salem, N. C.
Kindly send me professional sample of NICOZOL Capsules, also literature on NICOZOL for senile Psychoses.

..... M.D.

City ..... Zone .... State .....

DRUG SPECIALTIES, INC.
WINSTON-SALEM, N. C.
ethical | *pharmaceuticals*

Distributed in California by **BROWN PHARMACEUTICAL COMPANY, Los Angeles, California**
Distributed in Canada by **WINTER LABORATORIES, 341 Bloor St., West, Toronto 5, Canada**



'Sandril'

(RESERPINE, LILLY)

. . . *facilitates psychiatric treatment*

'Sandril' calms, diminishes anxiety and tension, improves sleep pattern in psychoneurotic states.

'Sandril' frequently produces relaxation, decrease in hallucinations and delusions, improved communication, and increased depth of effect in psychotic patients. Raging, combative, unsociable patients usually become more co-operative, friendlier, quieter, and much more amenable to psychotherapy and rehabilitation measures.

'Sandril' is virtually nontoxic; does not produce liver damage or severe orthostatic hypotension.

Lilly

QUALITY / RESEARCH / INTEGRITY

DOSAGE: Usually 0.5 to 1 mg. twice daily.

SUPPLIED: Tablets, 1 mg., yellow (scored), and 5 mg., buff (cross-scored). Ampoules, 2.5 and 5 mg. per cc., 10 cc. Also, tablets, 0.1 mg., orange, and 0.25 mg., green (scored); elixir, 0.25 mg. per 5 cc.

ELI LILLY AND COMPANY

80TH ANNIVERSARY 1876 • 1956

671050

HOW BRAIN LESIONS AFFECT NORMAL AND NEUROTIC BEHAVIOR

An Experimental Approach [1, 2]

JULES H. MASSERMAN, M.D., and CURTIS PECHTEL, Ph.D.[3]
Chicago, Ill.

This paper reviews briefly certain neuropsychiatrically significant findings derived from 6 years of study on the effects of various cerebral lesions on the normal and experimentally neurotic behavior of 50 cats and 40 monkeys.

[1] Read at the 111th annual meeting of The American Psychiatric Association, Atlantic City, N. J., May 9-13, 1955.

[2] Portions of this work were supported by grants from the U.S. Army, the U.S. Public Health Service, and the Department of Public Welfare of the State of Illinois.

[3] From the department of neurology and psychiatry, Northwestern University, Chicago, Ill.

EXPERIMENTAL TECHNIQUE

During a control period (average of 5 months in cats and 9 months in monkeys), each animal was closely observed and objectively rated on a 30-category, 6-point scale (Table 1) as to (1) its individual patterns of

TABLE 1

Six Abridged Behavior Rating Scales of 60 Employed

	Monkey		
	Vocalization	Entering apparatus	Dominance-submission
0	Usually quiet	Always enters freely	Always superseded by other animals
1	Joins other animals in vocalizing	Vacillates 1-2 minutes 2-3 times per week	Contests, but is dominated
2	Spontaneous ¼ time in lab.	Frequently delays until E taps transport cage or directs to entrance	Other animal holds slight advantage
3	Spontaneous ½ time in lab.	Must be urged ¾ of time	Holds slight advantage over other animal
4	Vocal most of time in lab.	Must be pushed but makes little resistance	Dominance maintained in contests
5	Intense vocalization the rule	Must always be forced; makes all possible resistance	Uncontested dominance
	Cat		
	Contact with experimenter	Muscular tension	Feeding in apparatus
0	Seeks proximity, food, and petting	Almost always relaxed	Freely accepts food offered
1	Accepts contact, but seeks it only occasionally	Mild tension only 1/week, lasting 5 minutes or more	Vacillates or accepts only special foods 1-2/week
2	Seeks contact rarely; may resist being petted	Moderate tension 2-4/week, lasting 5 minutes or more	Vacillates ¼ of time, or refuses food 1/day
3	May accept contact, but usually retreats and sometimes threatens	Almost daily tension lasting ¼ of time in lab.	Vacillates ½ of time, or refuses more than ½ of time
4	Avoids possibility of contact	Marked tension ¾ of time in lab.	Vacillates regularly; refuses ¾ of time
5	Actively resists handling	Severe tension almost continuous	Almost always refuses food

feeding, elimination, exploration and other conduct, (2) its reactions to various aspects of its environment, (3) its social and sexual behavior, and (4) its relations with the experimenters. Concurrently, each animal was tested for its speed and efficiency in learning (1) to respond to visual, auditory, or olfactory feeding stimuli, and (2) to manipulate various signal switches in their proper order and spatial relationship. Twenty-three of the cats were then subjected at random intervals to mild electric shock or blasts of air at the moment of feeding, and 18 of the monkeys to the "psychologic" trauma of the exposure of a toy rubber snake in the food box. After 1 to 15 such conflictful experiences, all of the animals, as described in detail in previous reports, developed experimental neuroses characterized by (1) physiologic manifestations of anxiety and startle responses, (2) inhibitions or alterations of feeding patterns, (3) changes in motor activity, (4) spreading phobias and compulsions, (5) regressions to early modes of conduct, (6) persistent somatic dysfunctions, (7) marked aversive or aggressive changes in relationship to other animals or to the experimenter and, in the case of the monkeys, (8) autoerotic and homosexual aberrations, prolonged catatonic states, and apparent hallucinatory behavior such as chewing and swallowing nonexistent food.

After these changes in behavior had become adequately stabilized over a period of 3 to 24 months, the animals were subjected to aseptic cerebral operations under Nembutal anesthesia, as indicated in Tables 2a, b, c, and d. The cats generally required special care and feeding for a week or so, but most monkeys recovered rapidly and were willing to work for food within a few hours or a day or two after the operation. Finally, the localization of all lesions was checked by the microscopic examination of stained serial sections of the cerebral regions involved.[4]

RESULTS

Since 18 cats and 19 monkeys are still under observation, the results reported here cannot be considered final. However, the following findings have been consistent to date:

Common Effects of the Brain Lesions.—These consisted of (1) moderate to extensive amnesia; (2) amelioration or disorganization of neurotic patterns; (3) diminished adaptability in behavior, leading to (a) stimulus-bound perseveration and (b) impaired versatility and skill in problem-solving; and (4) possibly as a result, "affective" changes characterized by a greater susceptibility to reactions indicative of startle and fear, with a corresponding increase in aggressivity.

Specific Effects of Various Lesions.—As presented in Tables 2a, b, c, and d, these varied not only with the site and duration of the lesion, but also with the species *and with the preoperative and postoperative experiences of each animal.* Typical configurations are the following: (1) Influence of Preoperative Traits: Animals with greater avidity for learning showed lesser degrees of postoperative impairment as compared with less adaptable subjects, whereas suspicious and hostile animals tended to retain these characteristics. In effect, "personality" traits were preserved or accentuated by the cerebral lesions. (2) Influence of Preoperative Conflicts: One of the most striking examples of this was that cats made experimentally neurotic became much more markedly and diffusely hostile and destructive after mediodorsal thalamotomy than did non-neurotic animals used as controls. (3) Effects of Time: Four amygdaloidectomized male cats were friendly for about 3 months postoperatively, but then began to snarl, scratch, and snap at all comers. When they were handled with special gentleness and circumspection, their aggressiveness to humans temporarily ceased; nevertheless, their suspicions of other cats continued, and under routine conditions of feeding and care their hostile behavior once again became severe and generalized. (4) Influence of Postoperative Care and Experience: Animals retrained in various adaptive skills as soon as possible after operation and returned to normal contacts with other animals and the experimenters showed markedly fewer impairments

[4] The cerebral surgery and tissue studies were performed by Dr. Leon H. Schreiner, Dr. Paul J. Hutt, and Mr. Arthur Kling.

TABLE 2a

EFFECTS OF CEREBRAL LESIONS IN 27 NORMAL AND 23 NEUROTIC CATS

LESION		Amnesia for Previous Learning	Amelioration of Neurotic Patterns	Amenability to Therapy	Performance Level	Motivation		Capacity to Relearn (where necessary)
						In simple tasks	In more complex tasks	
THALAMIC NUCLEI	MEDIODORSAL Control-10 Neurotic-10	Extensive	Extensive	Extensive	Very poor to poor. Erratic. Marked perseveration and inflexibility.	High	High	Markedly decreased
	ANTERIOR Control-5 Neurotic-4	Slight	Slight	Moderate	Slightly erratic but with marked perseveration and inflexibility.	Low	Low	Markedly decreased in less capable cats
CINGULATE AREAS	AREA 23 Control-3 Neurotic-2	None	Slight	Slightly increased	Inconsistent, varying between unchanged and markedly erratic	Low	Low	Learning less precise
	AREA 24 Control-2 Neurotic-1	None	Slight	Slightly increased	Somewhat inconsistent, varying between unchanged and moderately erratic.	Decreased	Low	Learning less precise
ORBITOFRONTAL AREA 13 Control-3 Neurotic-3		Moderate	Moderate	Moderate	Slow, markedly erratic, perseverative, and inflexible.	Low	Low	Moderately decreased
AMYGDALOID NUCLEI Control-4 Neurotic-2		None	Moderate	Marked	Slow, moderately erratic, perseverative, and inflexible.	Low	Low	Moderately decreased

TABLE 2b
EFFECTS OF CEREBRAL LESIONS IN 27 NORMAL AND 23 NEUROTIC CATS

LESION	Restlessness	Sexual Behavior	Thresholds of Startle and Fear	Social Adaptability		Effects of Isolation on			Resistance to Neurosis
				With other cats	With humans	Learning and skill	Motivation	Social adaptability	
THALAMIC Mediodorsal Co-5 N-4	Marked	Unchanged	Markedly lowered	Aggression by those previously neurotic	Marked affectivity	Slight loss	Unchanged	Slight loss	Very low
THALAMIC Anterior Co-10 N-11	Slight	Unchanged	Slightly lowered	Unchanged	More irritable, then unchanged	Slight loss	Decreased	Moderate loss, not permanent	Very low
CINGULATE Area 23 Co-3 N-2	Slight	Unchanged	Slightly lowered	Aggression between males	More irritable	Increased inconsistency; slight loss	Slightly decreased	Slight loss	Moderately lower
CINGULATE Area 24 Co-3 N-1	Slight	Unchanged	Slightly lowered	Aggression between males	Slightly more irritable	Increased irritability	Slightly decreased	Slight loss	Moderately lower
ORBITOFRONTAL 13 C-3 N-3	Slight	Unchanged	Slightly lowered	Aggression between males	Slightly more irritable	Moderate loss	Moderately decreased	Slight loss	Moderately lower
AMYGDALOID Co-4 N-2	Moderate	Initial indifference, then hypersexuality for 1 yr., then less drive	After 10 weeks markedly lowered	Good, then indifferent or less irritable	Aggression and fear	Marked loss	Markedly decreased	Marked loss	Very low

TABLE 2c

EFFECTS OF CEREBRAL LESIONS IN 21 NORMAL AND 18 NEUROTIC MONKEYS*

LESION		Amnesia for Learning	Amelioration of Neurotic Patterns	Amenability to Therapy	Performance Level	Motivation		Capacity to Relearn (where necessary)
						Simple tasks	More complex tasks	
THALAMIC NUCLEI	MEDIODORSAL Control-3 Neurotic-3	Slight or none	Slight	Slightly increased	Slightly erratic. Less precise.	Slightly decreased	Slightly decreased	Learning less precise
	ANTERIOR Control-4 Neurotic-3	Slight	Slight	Slightly increased	Moderately erratic, perseverative, inflexible and precipitate	Slightly decreased	Slightly decreased	Learning less precise
CINGULATE AREAS	AREA 23 Control-3 Neurotic-2	None	None	Slightly increased	Slightly erratic. Responses precipitate	Slightly decreased	Moderately decreased	Learning less precise
	AREA 24 Control-4 Neurotic-2	None	None	Slightly increased	Slightly erratic. Responses precipitate	Unchanged	Unchanged	Learning less precise
AMYGDALOID NUCLEI Control-7 Neurotic-8		Extensive	Extensive	Extensive	Markedly erratic. Responses perseverative, inflexible, precipitate.	Inconsistent. Frequently very low.	Inconsistent. Often very low.	Learning slower and less precise

TABLE 2d

EFFECTS OF CEREBRAL LESIONS IN 21 NORMAL AND 18 NEUROTIC MONKEYS

LESION	Restlessness	Sexual Behavior	Thresholds for Startle and Fear	Social Adaptability, Irritability		Effects of Isolation on			Resistance to Neurosis
				With other monkeys	With humans	Learning and skill	Motivation	Social adaptability	
THALAMIC Mediodorsal Co-3 N-3	Slight	Unchanged	Unchanged	Slightly increased irritability and aggression	Unchanged to better in fearful animals	Slight loss	Slightly decreased	Unchanged	Moderately lower
THALAMIC Anterior Co-4 N-3	Marked	Unchanged	Moderately lowered	Moderately increased	Moderately decreased friendliness	Moderate loss	Moderately decreased	More irritable, moderately less friendly	Slightly lower
CINGULATE Area 23 Co-3 N-2	Slight	Unchanged	Markedly lowered	Moderately increased	Unchanged	Slight loss	Slightly decreased	Slightly more irritable	Slightly lower
CINGULATE Area 24 Co-4 N-2	Moderate	Unchanged	Markedly lowered	Markedly increased	Unchanged to moderately less friendly in less capable monkeys	Moderate loss	Slightly decreased	Moderately more irritable	Slightly lower
AMYGDALOID Co-7 N-8	Moderate	Hypersexual, particularly the female	Moderately to markedly raised	Moderately increased	Females more friendly and tolerant	Slight loss	Slightly decreased	Slightly more irritable	Moderately lower

of social behavior and of adaptive capacities than did animals given comparable physical care but confined to their living cages. More specifically, the recovery in either learned patterns or in social relations could be separated by experimental isolation of the respective processes of retraining. As a further control, it was observed that when animals with cerebral lesions were subjected to 4 or 5 weeks of relative inactivity they suffered a much greater degree and persistence of deterioration in both learned and social behavior than did animals without cerebral impairment kept correspondingly confined. Moreover, several such absences produced cumulative effects in all the operated animals.

DISCUSSION

Unfortunately, studies such as these must contend not only with the variables already indicated but also with many other unknowns which can at best be only partially dealt with. Among these are (1) the unique genetic and experiential background of each animal; (2) its subtly but necessarily different handling in various manipulations by different experimenters, no matter how purportedly constant the procedure; (3) the impossibility of absolutely objective observation, grading, or reporting of complex behavior patterns; and (4) the surgical impracticality, in view of variability in blood supply, projection pathways, and other anatomic features, of producing exactly delimited cerebral lesions. Finally, from the standpoint of comparative neurophysiology, the troublesome question remains as to whether homologous lesions in animals can inform us accurately about functions in the human central nervous system, in which such marked encephalization and other shifts of function have occurred. Nevertheless, these studies have once again helped to substantiate an important clinical maxim: that the permanent effects of a cerebral lesion depend perhaps less on its site or even extent than on the personality of the patient, his significant pretraumatic or preoperative experiences, and the physical and psychiatric care given him during the crucial period of rehabilitation.

Summary and Conclusions

Over a period of 6 years 50 cats and 40 monkeys were closely observed for (1) their individual and social characteristics; (2) their capacity to learn various skills; and (3) the form and persistence of the experimental neuroses induced in 23 cats and 18 monkeys by exposure to adaptational conflicts. The animals were then subjected severally to lesions of the anterior or mediodorsal thalamus, the amygdalae, or cerebral areas 13, 23, or 24. The results to date indicate that the general and specific effects of cerebral lesions vary not only with their site and extent but also with (1) the preoperative experiences of each animal and (2) its postoperative care and re-training.

BIBLIOGRAPHY

1. Masserman, J. H. Behavior and Neuroses. Chicago: University of Chicago Press, 1943.
2. ———., Arieff, A., Klehr, H., and Pechtel, C. J. Nerv. & Ment. Dis., **112**: 384, 1950.
3. ———., and Pechtel, C. Experimental Neuroses in Monkeys. Motion picture film, 400 ft., silent. Psychological Cinema Register. State College, Pa.
4. Pechtel, C., and Masserman, J. H. Ann. New York Acad. Sci., **56**: 253, 1953.
5. Masserman, J. H., and Pechtel, C. Ann. New York Acad. Sci., **58**: 256, 1954.

DISCUSSION

George F. Sutherland, M. D. (Baltimore, Md.).—Investigating behavior by the method of conditioned reflexes is at best a time-consuming procedure. It often requires the patience of a Job. When one adds to this that not infrequently some untoward event may completely nullify the expected findings, it is not surprising that in the American literature on the subject since 1940 only 10 articles on the topic are reported, and for the most part these reports involved few experimental animals. It is apparent that this investigation which compiles the results on 90 animals was a task of no mean undertaking.

In general it may be stated that when lesions are created in the cerebrum in animals there follows a period of variable duration in which disinhibition is most marked. This has the unfortunate effect of either destroying or inhibiting the previous reflex patterns and so, for a time at least, one is unable to draw conclusions as to the effects of the lesion created. One, therefore, must be extremely careful in jumping to conclusions with respect to the effect of lesions.

Masserman and Pechtel have wisely taken the precaution of first preparing a rating scale before

tabulating their results. I found it somewhat difficult to evaluate the results comparatively because the rating scale for the cat was not the same as that for the monkey. The tabulations do show a certain specificity with respect to the type of behavior change. Amygdaloid lesions tended to ameliorate the neurotic elements and also to produce some alteration in sexual behavior. Most of the changes, for example the increased irritability or the lessened ability to learn or relearn, were general manifestations of an increased susceptibility to disinhibition rather than indications of alterations in specific units of behavior.

The "personality" of the animal, its preoperative experiences and its postoperative care provided much more significant indicators as to the behavioral changes to be expected from the specific lesions created. Unfortunately, certain investigations in human subjects have inadvertantly prepetuated the quest for specific centers for specific patterns of behavior. That this is a futile search is brought out rather clearly by the present paper. What is specific is the distribution and laying down of inhibition within the nervous system. That this is the result of a combination of the "personality" and the training may be inferred from this investigation. This is what determines the pattern of behavior; and it is conceivable such a pattern as viewed by an observer may vary slightly, in an anatomical sense, from one animal to another.

PSYCHOSIS AND ALLERGY: EXPERIMENTAL APPROACH

DANIEL X. FREEDMAN, M. D., F. C. REDLICH, M. D., AND WALTER W. IGERSHEIMER, M. D.[1]
NEW HAVEN, CONN.

An intrinsic relationship between the major psychoses and the allergic manifestations of asthma, hay fever, and eczema has been suggested by case history reports(1, 5, 9, 11, 13, 15, 16, 17, 25, 28, 31, 33, 34); studies of the incidence of clinical allergy in psychotic populations(2, 18, 21, 23, 27, 30, 36, 38); and study of the vasomotor and immunologic status of psychotic patients(12, 23, 24, 37).

The literature reveals considerable disagreement, but the majority of studies have led to the impression that the psychotic individual is less likely than the normal to exhibit allergic symptoms. Observations of alternation of allergic and psychotic symptoms produced the inference that the symptoms were mutually exclusive or would not often coexist. The statistical studies of Balyeat(2), MacInnis(21), Leavitt(18), McCallister and Hecker(23) support this impression and raise the question of a higher incidence of asthma in manic-depressive and epileptic patients than in schizophrenic ones. Ross *et al.*(30) and Leigh and Lovett Doust (19) have had, perhaps, the most adequate controls. These authors have concluded that the incidence of asthma is as frequent in both manic-depressive and schizophrenic populations as in normal groups.

While the question of allergic incidence is unresolved, the allergic status of the schizophrenic patient has been investigated. Vaughan *et al.*(37) reported diminished serum antibody response for the patient group, while Molholm(24) found an apparent hypoergic response to injected foreign protein. These findings were related, in part, to the "general sluggishness" and hyporeactivity of the schizophrenic group.

With skin testing, an experimental method is provided to determine whether the schizophrenic patient is hyporeactive in the skin as well as hypoergic and perhaps less likely to manifest allergic symptoms. We have tested a group of schizophrenic patients and controls with a battery of allergens in order to note the incidence of allergic response and directly to observe an aspect of the allergic status of a schizophrenic group.

METHOD OF TESTING

The following substances were used for intradermal administration: tuberculin (Old Tuberculin Koch, Parke-Davis) in dilutions of 1 : 1,000,000 to 1 : 1,000; histamine (Lilly) 0.1 cc of a solution containing 2.75 mg/5 cc; house dust (Lederle), 0.1 cc full strength. The skin was cleansed with 70% alcohol and substances were injected for intradermal testing on the flexor surface of both forearms with a 27-gauge needle, each test area outlined in pencil. Buffered physiologic saline, 0.1 cc, was used as a control. Areas were observed after 30 minutes for wheal reactions, and in 48 hours for eczematization. Poison ivy oleoresin (Graham) and tincture of cantharides applied to "Elastopatches" were placed on the subject's back and observed after 48 hours. Tendency to marked dermographism was tested in each subject by stroke. Tests were conducted in the spring. Results were judged by the same observer on a 0.4 scale based on wheal size and degree of erythema and vesiculation.

THE PATIENTS AND CONTROLS

Twenty-two male schizophrenics (12 hebephrenic, 7 catatonic, 3 paranoid), average age, 41 (range 27-49), with average hospitalization of 14½ years (range 2-28), and average duration of illness slightly longer were compared with 22 male medical students, all below age 30. The age difference is marked. Both groups resided in the same general area, the students for at least 8 months. Three of the 22 patients worked outside of the hospital buildings. None of

[1] From the Department of Psychiatry, School of Medicine, Yale University.

The authors wish to thank Dr. Marion B. Sulzberger, Dr. Edwin Ruskin, and Dr. M. Paul Lazar for aid in design and technique, and Dr. Edgar C. Yerbury and Staff of the Connecticut State Hospital for aid with the patient group.

the patients was noted by history or by hospital physicians to have major or minor allergies, while 2 of the control group reported possible hay fever.

OBSERVATIONS

Results are shown in Table 1. With the exception of the histamine and tuberculin findings, results show no significant difference between the 2 groups. In actual number of allergic reactions, the schizophrenic group has a slight numerical superiority. Such findings do not support the hypothesis that the schizophrenic group is either hypoergic or hyporeactive in the skin.

The tests were devised to elicit allergic response to a prior sensitization and to test for the presence of the wheal reaction (dust), the delayed inflammatory reaction (old-tuberculin), and eczematous reaction (poison ivy). We assumed that such a design would survey the capacity to respond allergically in a variety of ways to a variety of antigens. We did not employ antigens sensitizing by the oral route, nor test for autosensitizing agents; nor did we test for contemporary ability to develop sensitization. All the antigens have a known high incidence of reaction in most populations, so that we could assume both groups might have been fairly equally exposed. However, the tuberculin findings may well be related to the greater age and exposure of the hospitalized versus the preclinical medical student group.

Histamine and cantharides were included to test the intrinsic ability of the skin to urticate and vesicate, capacities which must first be established before allergic urtication and vesication can be evaluated. Results of the cantharides tests reveal that the schizophrenic group is not hyporeactive in the skin. Every individual tested responded to histamine. None of the patient group responded with more than a 2 plus response, whereas 16/22 medical students showed 3-4 plus response. Whealing due to allergy appears similar in both groups. The skin, therefore, is not hyporeactive in the patient group, although some unresponsivity to histamine is noted.

TABLE 1

RESULTS

Skin tests	Psychotic (22)	Control (22)
Histamine (0.1 of 2.75 mg/5 cc)		
1-2 positive	22	6
3-4 positive	0	16
Saline, 0.9% (0.1 cc)	0	0
Dust (Lederle) (0.1 cc)	5	4
Rhus patch (soaked)	15	12
Cantharides (soaked)	14	15
Old tuberculin Koch (Lederle)		
1 : 10,000	20	6
1 : 1,000	22	18
Dermographism	0	0

Skin testing, of course, is an experimental demonstration of allergy and not equivalent to the spontaneous, clinically manifest allergic symptom. The concurrence between skin tests and clinical allergy, within limits, is variable. In view of this fact, the difference between patient and control group would have to be marked to permit inference from allergy in skin tests to clinical allergy. If the patient group had shown notably less allergic response than controls, we might safely have inferred less clinical allergy and experimentally supported the hypothesis of less allergic manifestation in psychotic groups. Results that show a similar incidence of experimentally elicited signs of allergy make it hazardous to infer differences in clinical incidence between the groups and more plausible to infer similarity.

Neither our findings nor statistical studies can rule out an intimate relationship between psychosis and allergy. Such studies cannot elucidate a psychodynamic relationship. The process which eventuates in clinical allergic response involves a spectrum of causal and contributory factors ranging from the immunologic to the neurologic and psychologic. To define a relationship between allergic mechanisms and psychosis it may be necessary to search for relationship between psychotic mechanisms and links in the allergic process—sensitization mechanisms, autonomic and other nervous and hormonal factors. When one is observing for the manifest clinical response such relationships may be masked, thus obscuring the significance of clinical incidence studies.

THE HISTAMINE PROBLEM

The findings of diminished response to histamine are puzzling. Histamine and "H" substances are presumed to initiate the wheal response, and in our group the wheal reaction

was quite active in response to allergens and diminished in response to histamine. Extensive testing for allergic versus histamine whealing in schizophrenic patients may be desirable. The question arises, however, if it is specific inability of the skin to respond or a general unresponsiveness of the schizophrenic patient to histamine.

Ermala *et al.*(10) studied skin response to histamine in 252 subjects and found consistently smaller wheals in the schizophrenic patients than in other psychotic groups or controls. They thought of an autodesensitization to histamine during the course of schizophrenia. Marshall(22) conceived of mental patients as hypersensitive and tried histamine in desensitizing doses for therapy, whereas the Sacklers(32) think of the schizophrenic as unresponsive, and use large doses therapeutically to correct what they believe to be an adrenal imbalance involving histamine. As rationale they point, among other data, to a high incidence of hypochlorhydria and a low incidence of peptic ulcer in psychotic groups and the histamine-like response to electroshock therapy. Lucy *et al.*(20) have noted a general tolerance to histamine increasing with increased chronicity of schizophrenia.

While the mode of action of histamine and the physiology of the skin response to it are yet unsettled, the findings of histamine unresponsiveness are challenging.

There is one thread of evidence linking central nervous system function to the histamine response in skin. The assumption had been made that in the triple response of Lewis (initial red reaction, flare, and wheal) the flare component was mediated by an axon reflex without suprasegmental involvement. I. S. Cooper's findings(7) suggest that the spreading flare may be dependent on the function of diencephalic centers. An intact peripheral nerve to mediate the reflex is required; lack of diencephalic influence, as in decerebrate rigidity, may abolish the flare. Autonomic denervation does not appear to affect the spreading flare. In skin deprived of central innervation by complete cord transection, Cooper found the flare component diminished, but the wheals identical, compared with response in the centrally innervated skin of the same patient. Bereston (4) reported both flare and wheal diminished in the centrally denervated skin of the paraplegic patient. Grant's(14) work with the cholinergic urticarias implicates a spinal reflex in the initiation of urtication, since a stimulus at a distance (the legs) can produce whealing in the arm when circulatory elements are excluded.

If a relationship between suprasegmental neural activity and wheal response in schizophrenia can be definitely established, our findings might be referable to altered central nervous system function. It may be that central neural activity—whether diencephalic or in the reticulum—provides a background affecting the degree of reactivity to histamine, whether the response be in skin, blood vessel, or stomach. This background could affect reactivity to histamine by hormonal activity or through reticular outflow to the vasculature and spinal internuncial pools.

OTHER CONSIDERATIONS

With the exception of Molholm's work, experience with the skin testing of psychotic patients does not reveal hypoergy or hyporeactivity in the schizophrenic group. Zeller and Edlin(39) skin tested with ragweed pollen; Rosenow(29) has used alpha streptococci; and Beauchemin(3) has scratch tested with endocrine and food preparations. Wittkower and Russell's survey(38) of the incidence of skin disorder, including the allergic, does not support the hypothesis of hypoergy or hyporeactivity.

Molholm's work(24) suggested hyporeactivity of the skin in schizophrenia. He had tested the response of a patient and control group to injected guinea pig serum. This is a test for the ability to develop an allergic sensitivity—*i.e.*, the susceptibility to become sensitized. Our study and the work previously reviewed tested the ability to react allergically to prior sensitization. Molholm has demonstrated a degree of hyposensitivity, or resistance to new sensitization in the schizophrenic group, rather than some sluggishness in the skin reactivity or inability to mobilize an allergic reaction.

Bereston(4) with hemiplegic and paraplegic patients found diminished ability to develop sensitization in centrally denervated skin. His discussants note that this may not indicate inability of the affected skin to react, but rather inability for sensitization to spread

following a central neurologic lesion. Wittkower(38) cites evidence that a spinal reflex is necessary to the development of sensitization. Charpy(6) has presented evidence, not elsewhere confirmed, of central nervous system influence on the eczematous response. Stanton(35) has demonstrated for the rat that destruction of the temperature regulating centers caused alteration in antibody response, a finding which lends speculative interest to Vaughan's(37) observation that the schizophrenic group were more variable and as a group had lower serum antibody titres in response to injected pertussis vaccine. As with diminished ability to react to histamine in schizophrenia, diminished ability to develop sensitization and antibodies may be related to altered central nervous system activity.

Neither the findings of alteration in antibody response nor the reported diminished ability to develop sensitization necessarily reflects directly on the sensitization mechanisms or the clinical immunity status of the schizophrenic patient. They do suggest a trend in these respects and may stimulate more definitive and extensive research into the immunologic status of a variety of psychotic patients.

OTHER APPROACHES

The psychosis-allergy relationship was first noted because of persistently recurring reports of alternation between psychotic and allergic symptoms. A number of such case reports have discussed manic-depressive psychoses or mood disorders alternating with asthma(5, 9, 11, 15, 17, 18, 25, 28, 34), while others have noted the phenomenon among psychotic patients of varied classification(1, 12, 13, 16, 31, 38).

The notion readily arises that alternation of psychotic and physical symptoms is replacement of one for the other, and the danger of precipitating psychosis in the treatment of severe psychosomatic disorder has been stressed(1). Lovett Doust and Leigh (8) showed that asthmatic wheezing can be replaced by autonomic or certain mental symptoms, but were unable to find that psychosis *per se* served to replace wheezing. They have questioned the observations of alternation, since in following such cases they eventually found concurrence of allergic and psychotic symptoms(19). Sabbath and Luce (31) have noted that asthma need not occupy a pivotal position in the patient's defences, and suggest, in view of the concurrence of symptoms found in paranoid cases, that the "amount" of personality involved in the psychosis is inversely related to the presence of asthmatic symptoms. For skin diseases, Wittkower and Russell(38) have noted both exacerbation and remission with psychosis, perhaps remission more frequently with schizophrenia. Karnosh(16) noted fluctuations in either direction in depressive patients with allergic skin diseases.

In view of the conflicting data it appears likely that the alternator represents a perhaps constantly changing subgroup of those psychotic individuals who have coexistent allergic disease. The group of alternators may be differentiated from other allergic psychotic individuals by as yet unspecified physiologic and psychologic characteristics. It seems probable that personality factors and links in the allergic process other than hypoergy would account for the alternator.

Funkenstein's study(12) of alternators has demonstrated the diminished ability of mecholyl to produce wheezing during the psychotic episode. Whether or not psychotic patients with coexistent allergy would generally show less personality impairment as well as less physiologic deviation in autonomic and histamine tests remains to be demonstrated. Funkenstein's demonstration of autonomic unresponsiveness does suggest yet another link in the allergic process which may comprise a part of the elusive relationship between psychosis and allergy.

CONCLUSIONS

The postulated intrinsic relationship between psychosis and allergy is evidently neither inevitable, nor, when present, precisely defined. The task is to designate what combination of physiologic and psychologic factors characterizes a significant relationship such as alternation, and to characterize these factors when the relationship is one of incidental coexistence of allergy and psychosis. Review of the literature leads us to suggest that between psychosis and links in the allergic process—sensitization mechanisms, histamine reactivity, and autonomic responsivity—there may be significant rela-

tionship. Such relationship need not be clinically manifest. For schizophrenia, alterations in central nervous system function may account for our findings of lowered histamine responsivity, and reports of altered autonomic response and diminished ability contemporaneously to develop sensitization and antibodies. Experimentally, our schizophrenic patients can react allergically in the skin just as well as the control group of medical students when both are tested for prior sensitization. In this sense, neither hyporeactivity nor hypoergy in the skin is demonstrable for the schizophrenic group.

Summary

1. Twenty-two schizophrenic patients and 22 preclinical medical students were skin tested with a battery of allergens, histamine and cantharides, to test experimentally the hypothesis that psychosis involves diminished ability to react allergically.

2. The patient group showed no diminished ability to react allergically when compared with controls, but did have consistently smaller wheal response to histamine.

3. It is suggested that while neither hypoergic nor hyporeactive in the skin, the schizophrenic patient may differ from the normal with respect to certain links in the allergic process, and may so differ without of necessity clinically manifesting this.

4. Alteration in central nervous system function in schizophrenia—possibly diencephalic or reticular—may account for the differences in histamine response and the reported differences in autonomic responsivity, in ability contemporaneously to develop sensitization and to respond to antigen with high titre of antibodies.

BIBLIOGRAPHY

1. Appel, J., and Rosen, S. R. Psychosom. Med., **12**: 236, 1950.
2. Balyeat, R. M. Am. J. Ment. Sc., **176**: 332, 1928.
3. Beauchemin, J. A. Am. J. Psychiat., **92**: 1191, 1936.
4. Bereston, Eugene S. J. Invest. Dermat., **6**: 75, 1945.
5. Brown, F. A., and Goiten, L. J. Nerv. & Ment. Dis., **98**: 638, 1943.
6. Charpy, J., Stahl, A., and Castelain, P. Y. Étude histologique et chronologique de la constitution de la lesion de l'eczema. Sem. Hop. Paris, **29**: 2624, 1953.
7. Cooper, I. S. J. Clin. Invest., **29**: 465, 1950.
8. Lovett Doust, J. W., and Leigh, D. Psychosom. Med., **15**: 292, 1953.
9. Dunbar, H. F. Emotions and Bodily Changes. New York: Columbia University Press, 2d ed., 1938.
10. Ermala, P., and Autio, L. On intradermal histamine tests in schizophrenia. Acta Psychiatrica et Neurologica, Supp. 60, 1951.
11. Fenichel, O. Hysterien und Zwangsneurosen. Psychoanalytische spezielle Neurosenlehre. Wien: Internat. Psychoanalyt. Verlag, 1931.
12. Funkenstein, D. H. Psychosom. Med., **12**: 377, 1950.
13. Gillespie, R. D. B. M. J., **1**: 1285, 1936.
14. Grant, R. I., Pearson, R. S. B., Comeau, W. J. Clin. Sc., **2**: 253, 1936.
15. Hansen, K. Zur Frage der Psycho-oder Organogenese beim allergischen Bronchial-asthma und den verwandten Krankheiten: 2-Uber Psychische Bedingungen des Bronchialasthmas. Nervenarzt., **3**: 513, 1930.
16. Karnosh, L. Psychiatric Quart., **18**: 618, 1944.
17. Kerman, E. F. Psychosom. Med., **8**: 53, 1946.
18. Leavitt, H. C. Psychosom. Med., **5**: 39, 1943.
19. Leigh, D., and Lovett Doust, J. W. J. Ment. Sc., **99**: 489, 1953.
20. Lucy, J. D. AMA Arch. Neurol. & Psychiat., **71**: 629, 1954.
21. MacInnis, K. B. J. Allergy, **8**: 73, 1936.
22. Marshall, W., and Tarwater, J. S. J. Nerv. & Ment. Dis., **36**: 88, 1938.
23. McAllister, R. M., and Hecker, A. C. Am. J. Psychiat., **105**: 843, 1949.
24. Molholm, H. B. Psychiatric Quart., **16**: 565, 1942.
25. Oberndorf, C. P. N. Y. J. Med., **35**: 41, 1935.
26. Phillips, R. J. B. M. J., **2**: 363, 1937.
27. Rathmell, T. K., and Lieber, M. M. J. Nerv. & Ment. Dis., **97**: 397, 1943.
28. Reichmann, F. Zur Psychopathologie des Asthma bronchiale. Med. Klin., **18**: 1090, 1922.
29. Rosenow, E. C. Postgrad. M. J., **3**: 367, 1948.
30. Ross, W. D., Hay, J., and McDowall, M. F. Psychosom. Med., **12**: 170, 1950.
31. Sabbath, J. C., and Luce, R. A., Jr. Psychiatric Quart., **26**: 562, 1952.
32. Sackler, R. R., Sackler, M. D.; van Ophuijsen, J. M. W., Tui, C., and Sackler, A. M. J. Clin. & Exper. Psychopath., **12**: 5, 1951.
33. Saul, L. J. Psychosom. Med., **3**: 66, 1941.
34. Saxl, St. Ein Fall von Asthma bei Manisch-Depressiven. Wien. Klin. Wchnschr., **46**: 1515, 1933.
35. Stanton, A. H., Meunning, L., Kopeloff, L. M., Kopeloff, N. J. Immunol., **44**: 237, 1942.
36. Swartz, J., and Semrad, E. V. Psychosom. Med., **13**: 314, 1951.
37. Vaughan, W. T., Jr., Sullivan, J. C., Elmadjian, F. Psychosom. Med., **11**: 327, 1949.
38. Wittkower, E., and Russell, B. Emotional Factors in Skin Disease (Psychosomatic Medicine Monographs). New York: Hoeber, 1953.
39. Zeller, M., and Edlin, J. V. J. Allergy, **14**: 564, 1943.

PSYCHIATRIC DISORDERS AMONG NEGROES: A SOCIOLOGICAL NOTE

R. A. SCHERMERHORN,[1] CLEVELAND, OHIO

Data on the differential incidence of mental disorders among Negroes and whites have frequently appeared in the psychiatric literature. Some of the earlier studies of these differences have accepted uncritically a number of common stereotypes about Negroes as a group, conceptions that attribute many of the disorders to inherent or ineradicable "racial" factors(1, 2). In general, this trend is characteristic of the literature up to the 1920's.

Another group of researchers, appearing somewhat later, has furnished important information on differential incidence in a single hospital(3, 4). These studies are largely noninterpretative and present the figures without any serious attempt to account for them; at the same time they deal with samples so small that their representativeness may be called into question. Their chief value lies in the cumulative evidence which they furnish.

It is difficult, if not impossible, in the present state of our knowledge, to make any definitive statistical study of Negro patients as compared with whites. The biennial report of the U. S. Public Health Service, *Patients in Mental Institutions*, gives no statistics by race, but only by age and sex. The most accurate comparison of Negro-white incidence of mental disorders is still Malzberg's study of first admissions to New York State hospitals during the years 1929-1931 (5). This research is more accurate than others comparable because: first, it presents figures for an entire state rather than a single hospital; second, racial discrimination in admitting Negroes to mental institutions is practically nonexistent in New York State (5, p. 226); third, increased admissions are not a response to greater facilities in New York State as in so many others because "for many decades patients committed to New York State hospitals have not been rejected because of lack of facilities"(5, p. 45); and fourth, Malzberg gives standardized rates rather than crude rates of first admissions. Since Negroes had a disproportionate number at the lower age levels, their crude rates were correspondingly low. After correction for age, their standardized rates are much higher. Thus the standardized annual rate for Negroes was 225.7 per 100,000 Negroes, and 97.4 per 100,000 whites. The Negro rate was in excess in the ratio of 2.3 to 1. For schizophrenia the Negroes had a higher rate in the ratio of 2.0 to 1, and for manic-depressive psychosis a ratio of 1.5 to 1(5, pp. 238, 252 and 255). Other students of the problem like Dayton(6) and Pollock (7) present crude rates rather than standardized ones, with similar but less marked differentials.

There is serious need for a replication of the Malzberg research in the 1950's to give some idea of the changing trends in psychiatric disorders among Negroes. It is a doleful fact that our most reliable statistics, both for Negroes and for our population as a whole, are now over 20 years old(8). More recent crude rates are, of course, available.

Wartime studies of Negro soldiers with psychiatric casualties have advanced our knowledge appreciably, but the opportunity for systematic research facilitated by the military situation was only sporadically exploited. Ripley and Wolf found the incidence of Negro psychiatric cases in the Netherland East Indies to be 3.1 times greater than that of whites. This was based on a population of 3 companies(9). Harms, Kobler, and Sweeney reported on the backgrounds of 100 Negro psychiatric cases in an army mental hygiene unit(10) while Gardner and Aaron gave a similar, and somewhat more detailed analysis of 100 Negro cases in the Navy (11). The 2 researches are not comparable, however, since the Harms study used only 3 diagnostic categories: simple adult maladjustment, psychoneurosis, and constitutional psychopathic state, while Gardner and Aaron ran a wide gamut of at least 15 diagnostic categories.

[1] Associate professor of sociology, Western Reserve University, Cleveland, Ohio.

A recent unpublished study by Lantz(12) of 1,000 psychiatrically diagnosed cases in the Air Force shows a relatively small differential for psychoses in the 2 groups (Negroes 8.7%, whites 6.3%). While correction for age was presumably not necessary in this group, there is some loss of validity in the comparison because the total number of whites was 954, while that of Negroes was only 46. This small number of Negroes must be kept in mind in using the figures.

It is the general tendency in practically all of these studies to compare Negro and white psychiatric populations, large or small, with respect to a few or more variables such as age, sex, marital status, rural-urban residence, economic status, education, occupation, size of family, marital status of parents, etc.

The purpose of this sociological note is to draw attention to 3 implicit assumptions or undisclosed premises of this type of research. The first 2 are more or less inherent in the method, while the third is capable of self-correction in the process of research. It is the theme of this article that every one of these assumptions is open to serious doubt; if this is the case, then it urges upon all psychiatric researchers the danger of accepting apparently valid data at face value—at least until the basic assumptions are examined and evaluated.

The three assumptions in question are these: (1) that Negro and white populations may be considered essentially alike except for the variables in question; (2) that the experiential meaning of these variables is culturally equivalent in both groups; (3) that consideration of each variable by itself, rather than a specially organized cluster of variables as a unique constellation may furnish a proper clue to etiology. Sociological considerations make it possible to question the truth-value of any or all of these propositions. Incidentally, it is the merit of Stevens (13) or Kardiner and Oversey(14) to suggest in their own research a somewhat different approach to the problem, one that can help to overcome the inadequacies of more traditional methods.

As to the first assumption, a little reflection will reveal the indubitable fact that American Negroes with very few exceptions experience color discrimination as part of their daily lives while whites do not. Elaborations of the color complex are frequent, if not ubiquitous, in the anxiety of the Negro patient as is shown by the case histories in Kardiner and Oversey's well-documented work(14). This stark and absolute difference can make the 2 racial groups noncomparable simply because it adds an unknown, undetected weight to selected variables.

As for the second assumption, research on the Negro community has shown a sex ratio with more women than men(15, p. 254), a large proportion of maternal families(16), and a greater opportunity for employment among women than among men(17, pp. 145-6). Each of these items gives the Negro a different cultural meaning for the variables of sex, marital status, family size, marital status of parents, or for simpler terms like "father," "mother," "marriage," or "divorced," in comparison with the cultural meanings of these terms for a white person (or a white investigator). While there is sufficient overlap for the terms to be meaningful in the 2 racial groups (both, after all, are subjects of American culture), the nonidentical areas of meaning are sufficient to disturb their comparability in strictly scientific terms.

The third assumption is a source of difficulty for all analytical reasoning where the separation of wholes into parts enables the investigator to isolate component elements for more careful inspection and searching inquiry. By holding constant any one of these analytical elements, he gains control of its mode of operation, making prediction more exact. In presenting such items singly (or even *seriatim*), the unwary researcher, however, can overlook the compound effects of a unique configuration, which are multiplicative or algebraic rather than simply additive. To employ a psychological illustration, it is the pitfall of neglecting the *Gestalt* in favor of the summation of behavior units analytically established. The method is self-corrective insofar as the imperfect research results force the investigator to adopt new hypotheses for testing, and, in the long run, he will probably formulate a more sophisticated notion of unity-in-variety.

A critique of the third assumption is espe-

cially relevant to psychiatric research on the Negro population since the researcher may have sufficient psychiatric knowledge or general sociological information to set up item analysis, but, at the same time, lack familiarity with the subcultural constellation affecting the socialization of American Negroes(18). Close examination of the Negro community reveals a number of interpenetrative or mutually implicative factors that may be separable for analytic purposes and yet have a total impact of a unique sort in the subculture, i.e., have no analogy in the daily experiences of otherwise comparable white persons(19).

I shall present briefly some of the empirical considerations that reinforce the critical analysis just offered in the above argument. To begin with, the Negro community is regarded as a social unit partly because its members are not allowed to compete on equal terms with the whole of American society. Thus the average Negro lives in an atmosphere in which his socialization is in terms of values and activities he may not fully share. He lives a dual existence since he is both a part of and separate from the wider community. This means that to survive he must follow 2 paths of socialization, one an adjustment to the competitive demands of the total society and the other an identification with the racial community "with its freedom from alarm, its permission to hate, its aggressive behavior, and its racial aims"(18, p. 255). This dual socialization lets the Negro share the technology of the dominant community but have strong subgroup interests. He cannot fulfill all his desires in either group, so his adjustment is problematical, and his ideology slanted frequently toward the subgroup with its easier adjustment(18, p. 256). Yet this subgroup identification is unsatisfactory because the racial group has low prestige in the total society whose values are inevitably interiorized—at least in part—by the Negro himself.

Since color is regarded by most Americans as the most obvious or most identifiable mark of membership in the minority group, it has become a status-symbol in the subculture. Clark and Clark discovered that 70% of 134 southern Negro children preferred brown color, while only 36% of 119 northern Negro children did so(20). In a later study which corroborated the first, the Clarks(21, p. 350) made this statement:

> The discrepancy between identifying one's own color and indicating one's color preference is too great to be ignored. The negation of the color brown exists in the same complexity of attitudes in which there also exists knowledge of the fact that the child himself must be identified with that which he rejects. This apparently introduces a fundamental conflict at the very foundations of the ego structure.

In a northern mixed nursery school, Goodman found high awareness of color differences twice as frequent among Negro as among white children, with the higher levels of color awareness shown by the darker Negro children(22, pp. 32, 44 and 178). In summary (p. 218) she remarks:

> It is all too clear that Negro children not yet five can sense that they are marked and grow uneasy. They can like enormously what they see across the color line, and find it hard to like what they see on their side. In this there is scant comfort or security, and in it are the dynamics for rending personality asunder.

The freqency of color delusions or color denial in Negro mental patients points up the significance of this symbol in the dynamics of the personality(23). Conflicts over color are so endemic among Negro patients that Kennedy(24, p. 313) assigns them greater importance than the typical intrafamilial conflicts of early childhood:

> There is more room for the individual elaboration and perception of experience in the white population. The Negro patient reflects in a unique way the fate he shares with every member of his in-group. Hence his specific life experiences are only secondarily elaborated and the development of the individualized ego is blurred by the phenomenon of color.

Another feature of Negro community life is the relatively unique family constellation. The heritage of slavery and discrimination has produced the maternal family with high rates of desertion, illegitimacy, and general instability(16, 25) as well as uncertain employment for the Negro breadwinner. The Department of Labor(26, p. 24) reports that:

> In 1950, Negro families had an average annual income of $1,869, 54 percent of the average income of $3,445 among white families. The differential seems particularly wide in view of the fact that a higher proportion of Negro family members are in the labor force.

On a rough estimate this would mean that something like two-thirds of the Negro families are "lower class."

As a result of these conditions, the Negro child in the lower income groups is subjected to frequent neglect by working mothers and to total absence or intermittent presence of the father.

> Hence we get repeated stories of children being subjected to disciplines that are both arbitrary, instantaneous, and inconsistent, depending often on whim, and at the same time without the ability to offer the child the appropriate rewards for obedience and conformity. Children recognize these rewards chiefly in terms of need satisfactions. These the parent, more often than not, cannot implement. They often fail on the sheer subsistence level [14, p. 310].

This does not mean that lower-class Negro mothers fail uniformly to give affectionate maternal care. As Kardiner and Oversey show, the intention of such mothers is the usual one, and many succeed. However, they comment about their Negro patients, "This is not, however, what one hears from the subjects (of therapy). They tell chiefly the story of frustration and of arbitrary discipline by mothers" (14, p. 307). The double strain of daily employment and home making responsibility under difficult conditions results in the irritability of exhaustion.

The Negro male child in a lower-class environment has difficulty in identifying with either parent. Whatever the affective ties with his mother, he finds that she has a constant fear that he will follow in the father's footsteps as an insecure breadwinner. If he submits to the mother's demands, he may be regarded as a sissy by his father and his age mates; for this he despises himself. Should he identify with the father? Yet the father image has already been damaged by the constant stream of rebukes and slurs thrown at him by the mother. A father identification may mean freedom from the mother's control, but it also separates him from the only safety and security he knows. Ambivalence toward both figures results; part of him is frustrated and repressed, whatever his choice. Actually, the inconsistency of his discipline may lead him to a rejection of both parents and to a certain hard shrewdness with an atrophied superego. Parental demands are not interiorized whenever strong affective ties are lacking. Children surrendered to a relative for custody have a still more difficult adjustment because they receive (more often than not) worse mistreatment. They are (14, pp. 307-8):

> . . . adjustable, but at the cost of complete mistrust in everyone. The result of the continuous frustrations in childhood is a personality devoid of confidence in human relations, or an eternal vigilance and distrust of others. This is a purely defensive maneuver which purports to protect the individual against the repeatedly traumatic effects of disappointment and frustration. The self-referential aspect of this is contained in the formula, "I am not a lovable creature." This, together with the same idea drawn from the caste situation, leads to a reinforcement of the basic destruction of self-esteem.

Thus, while the differentials in the socialization of white and Negro patients may be analyzed point by point, it is difficult to escape the suspicion that the comparison is often more apparent than real. On the basis of our threefold analysis it is possible to summarize these brief comments by presenting 3 propositions.

1. The in-group segregated sub-culture of Negroes resulting from subordination in terms of color makes an itemized comparison with whites (who have a different social environment) misleading to the unsophisticated investigator unacquainted with the sociological dimensions of the situation.

2. Such environmental variations may be reflected in differential meanings of the items under analysis in the 2 racial groups, as well as to differential development of ego and superego structure.

3. Without sociological cognizance of the unique constellation of factors in the background of Negro personalities, it is possible to (a) use item analysis that mistakenly assigns the same weight to each item for Negroes and whites; (b) make errors of judgment in assessing etiological factors; and (c) misunderstand the therapeutic process.

Regarding items (b) and (c) in the third proposition, it is sufficient to point out that mistakes in diagnosis could result from uncritical use of case history materials in a Negro patient, if given the same weight that they were given for a white patient. For example, the irregular school attendance or job history of a Negro patient may be less a sign of neurotic instability than of economic

deprivation and the consequent availability of nothing but odd jobs (13, p. 497).

Summary and Conclusions

Full-scale comparison of Negro and white mental patients is not possible today because the federal statistics take no account of race. Earlier studies of limited populations were partially vitiated by racist interpretations or by limited samples. Malzberg's study of over 20 years ago is still our most accurate basis of comparison; there is need for a replication of this study today for an analysis of changing trends. Wartime researches have shown results similar to those of Malzberg, but they lack systematic character.

There are pitfalls in accepting many of these comparative studies at face value; to avoid these difficulties it is shown that their incorporation of certain common assumptions makes their interpretation questionable without proper sociological analysis. Where 2 racial populations are compared in terms of social variables, it is relevant to note 3 major assumptions: (1) That Negro and white populations may be considered essentially alike except for the variables in question; (2) that the experiential meaning of these variables is culturally equivalent in both groups; and (3) that consideration of each variable by itself, rather than a specially organized cluster of variables as a unique constellation may be the relevant factor. Illustrations of the uniqueness of the Negro's social environment are given to clarify the theoretical issues.

In conclusion it is noted that inadequate appreciation of the sociological dimensions in the differential racial environments may lead the researcher or clinician to overlook variations in the development of the personality with consequent difficulties in assessing etiological factors, accurate diagnosis, or therapeutic proceedings.

BIBLIOGRAPHY

1. Green, E. M. J. Nerv. Ment. Dis., 41: 697, 1914.
2. O'Malley, Mary. Am. J. Insan., 71: 309, Oct. 1914.
3. Wagner, P. S. Am. J. Psychiat., 95: 167, 1938.
4. Wexberg, Erwin. Tri-State Med. J., 13: 2694, Feb. 1941.
5. Malzberg, Benjamin. Social and Biological Aspects of Mental Disease. Utica, N. Y.: State Hospitals Press, 1940.
6. Dayton, Neil. New Facts on Mental Disorders. Springfield: C. C. Thomas, 1940.
7. Pollock, Horatio. Manic-Depressive Psychoses, Association for Research in Nervous and Mental Disease. Baltimore: Williams and Wilkins, 1931.
8. Schermerhorn, R. A. Social Problems, 1: 17, 1953.
9. Ripley, H. S., and Wolf, S. Am. J. Psychiat., 103: 499, Jan. 1947.
10. Harms, H. E., Kobler, F. J., and Sweeney, F. J. War Med., 7: 309, 1945.
11. Gardner, George E., and Aaron, Sadie. Am. J. Orthpsych., 16: 481, July 1946.
12. Lantz, Herman R. Social factors in mental disorders, a study of 1,000 psychiatrically diagnosed cases. Unpublished Ph. D. Dissertation, The Ohio State University, 1950.
13. Stevens, R. B. Am. J. Psychiat., 103: 493, Jan. 1947.
14. Kardiner, Abram, and Oversey, Lionel. The Mark of Oppression, A Psychosocial Study of the American Negro. New York: Norton, 1951.
15. Landis, Paul H. Population Problems, A Cultural Interpretation. New York: American Book Co., 1943.
16. Frazier, E. Franklin. The Negro Family in the United States, rev. ed. New York: Citadel Press, 1948.
17. Powdermaker, Hortense. After Freedom. New York: Viking Press, 1939.
18. Reid, Ira deA. J. Negro Ed., 19: 253, Summer 1950.
19. Schermerhorn, R. A. These Our People, Minorities in American Culture. Boston: D. C. Heath, 1949.
20. Clark, Kenneth B., and Clark, Mamie P. Pp. 551-560 *in* Swanson, G. E., Newcomb, T. M., and Hartley, E. L., eds. Readings in Social Psychology, 2nd ed. New York: Holt, 1952.
21. Clark, Kenneth B., and Clark, Mamie P. J. Negro Ed., 19: 341, Summer 1950.
22. Goodman, Mary Ellen. Race Awareness in Young Children. Cambridge: Addison-Wesley Press, 1952.
23. Myers, Henry J., and Yochelson, Leon. Psychiat., 11: 39, Feb. 1948.
24. Kennedy, Janet A. Psychiat., 15: 313, Aug. 1952.
25. King, Charles E. Social Forces, 24: 100, Oct. 1945.
26. Negroes in the United States, Their Employment and Economic Status. Bull. 1119, U. S. Department of Labor, U. S. Govt. Printing Office, Dec. 1952.

A PRELIMINARY PSYCHIATRIC STUDY OF ATTEMPTED SUICIDE AS SEEN IN A GENERAL HOSPITAL

PETER E. SIFNEOS, M. D., CHARLES GORE, M. D., AND A. COIT SIFNEOS, B. A.
BOSTON, MASS.

There were some 198,000 people who killed themselves between 1944 and 1952(6) and a great many more who tried to do so. Of all these human beings, the 155 who attempted suicide and who were studied for this report are a very small percentage, too small to be the basis for reliable statistics or for proving or disproving any existing hypothesis on suicide. They may be a large enough percentage, however, to be typical of some of the actions, emotions, methods, and motivations of other suicidal people. To present the data of the 155 human beings is the purpose of this paper. It is an effort "To see the world in a grain of sand." [1]

All were admitted to the psychiatric service of the Massachusetts General Hospital. The other suicidal patients in the service and hospital during the 9 years were not included in this study because their records lacked adequate information on the suicidal attempts or were untraceable. Many were filed under medical or surgical diagnoses: infected lacerated throat wounds, for example, or pneumonitis following drug ingestion.

The patients were not a typical sample of the population. Mostly people who lived near the hospital, they were in low-income brackets and of special national groups.

Forty were interviewed directly by the authors; 115 were studied in the records.

LITERATURE

The literature on suicide is voluminous. Summaries of some of the findings follow.

The role of social sciences in the study of suicide cannot be overemphasized(5). Dynamic formulations are very important in individual cases(8). In "successful" suicides, men outnumber women in a ratio of 3 to 1; in attempted suicides, men are outnumbered by women in a ratio of 1 to 3(1, 2, 3, and 6). In age, the peak for men is from 25 to 29 years; and for women, from 20 to 24(2, 3, and 4). Northern Europeans outnumbered Southern Europeans(6). Negroes attempt suicide less frequently than any other race(2 and 6). More Protestants than Catholics try to kill themselves(1, 3, and 6). Marriage seems to be a protective influence; the more people in the family, the fewer the suicides (2, 6, and 10). Attempts increase in May and June in the Northern hemisphere and in January and February in the Southern hemisphere(2 and 6). Suicide is rare in the morning, frequent in the afternoon(3). With war it decreases, and with peace it increases(1, 6, and 10). Poison (iodine was first of the poisons 15 years ago) is the favorite method, with gas second. Slashing, firearms, hanging, leaping, and drowning follow in that order in men; leaping, slashing, firearms, drowning, and hanging, in women(2 and 3). Physical incapability was the major motivating factor in 18 out of 200 patients(7). The incidence of a history of broken homes is higher among suicidal individuals than among those with any other type of adult nervous or mental illness(9).

COMPARISON OF FINDINGS WITH LITERATURE

Findings on the 155 patients fitted roughly into the above patterns. There were 45 males and 110 females, a ratio of 1 to 2½. From 20 to 24 years was the most common age for men, and from 25 to 30 for women. More Catholics attempted suicide than Protestants. (The large percentage of Catholics in the population served by the hospital may be responsible for this deflection.) Sixty-eight patients were married; 87 were not (64 were single, and 23 widowed, separated, or divorced.) June and July were the months in which suicide was attempted most frequently. From 7:00 to 8:00 a.m. and from 1:00 to 2:00 p.m. were the most common times for men, and from 6:00 to 7:00 a.m. and from 11:00 to 12:00 p.m. for women.

The methods of suicide followed those of the literature except that among the poisons

[1] William Blake, "Auguries of Innocence."

barbiturates (18 males, 59 females) were first; aspirin second; and iodine only third. The other 10 were in this order; mercurochloride, ammonia, mercurochrome, phenol, atropine, digitalis, and bromide.

GENERAL FINDINGS

The diagnoses of the hospital charts were left unchanged: psychosis (schizophrenia, manic-depressive psychosis, and involutional depression), 43; personality disorders (character disorder, chronic alcoholism, drug addiction), 37; neurosis with symptom formation (hysteria, reactive depression, obsessive-compulsive neurosis, anxiety), 67; other (cerebral arteriosclerosis, encephalitis, general paresis, toxic reaction), 8.

Fifty of the 104 patients with neurotic symptom formations or personality disorders left the hospital within 1 or 2 days after admission, 20 against the advice of their doctors.

Ten of the 40 patients who were directly interviewed said that they had not planned to kill themselves.

The methods of the neurotic patients were usually not as efficient as those of the psychotic. Of the 32 who took ascertainable amounts of barbiturates, 22 neurotics averaged 1.4 gm.; 10 psychotics, 2.35 gm. To ensure the success of their venture, psychotic patients often used multiple methods.

CASE 1.—F. B. was a 54-year-old woman who had been treated in several mental hospitals for manic-depressive psychosis. Although she seemed "better than I've seen her for a long time" to her husband, she took 11 100-mg. Nembutal tablets, climbed into a bathtub filled with cold water, and slashed her jugulars. The injury to her neck severed her trachea.

The reasons for suicide (The word *reasons*, is used here as a general term to include causes, motives, occasions, precipitating factors, and explanations) were given by the patient, by relatives, by attending physicians, and by psychiatric interviewers. They were hostility, 61; loss of loved one, 15; environmental manipulation, 13; reaction to "incurable" illness, 10; alcoholism, 5; finances, 4; loneliness, 2; homosexual love loss, 2; prospect of hospitalization, 2; cut in drug supply of addicts, 1; jail, 1; lack of job, 1; hallucinations, 1; idea of persecution, 1; problem of sexual identity, 1; tiredness of life, 1; and unknown, 34.

Just how hostility operates as a reason for suicide is not clear. Webster defines hostile as "belonging or appropriate to an enemy." But in a patient who attempts suicide, the feelings appropriate to the enemy apparently lead to an act against himself.

CASE 2.—T. P., a 22-year-old student nurse was having an argument with her boy friend. "I loved him, and then I hated him. . . . I thought I'd teach him a lesson. I know he does not know how to swim, so I jumped into the river. I could see myself being dragged by the current." (The patient was an excellent swimmer, the water in which she jumped was very shallow, and the current was negligible.)

CASE 3.—R. S. was a 29-year-old divorced woman. When she was 5 weeks old, her parents died, and she was brought up in foster homes. Her boy friend refused to marry her. "He loves me in a different way. He does not understand me. He is too busy. I was angry. I did not want to hurt him, but I had to. I got up from my chair, poured a drink, went into the bathroom and took a razor. I came back, and he looked up. . . . I used it. It didn't hurt. I said, 'Look what I am doing for you!'"

CASE 4.—B. W., a 30-year-old single woman, was in therapy for hysterical symptoms and impulsive acting out. After 9 months when she seemed improved, her psychiatrist discontinued his care. The patient was very angry at him and tried frequently to re-establish treatment. She became depressed. One day after her psychiatrist had repeated that he did not think she needed intensive therapy, she took 9 100-mg. Nembutal tablets. When she was admitted to the emergency ward, she insisted on having her psychiatrist come to see her. She was not seriously depressed, and in 1 day she signed out "against advice" and left the hospital.

Environmental manipulation is another reason for suicide that may be unexpected. Many of the patients, nevertheless, did seem to profit from their attempts at killing themselves. Despite the sufferings they incurred, they consciously or unconsciously used suicide as a means of manipulating their environment. All the 13 clear cases were neurotic women. In addition to the following examples, B. W. (Case 4) and B. D. (Case 8) are typical.

CASE 5.—P. R. was a 34-year-old married woman. "During the past 3 years my husband was drinking more and more. There was no future, no use. . . . I could not help myself. I became violent. I thought I might kill my husband. That would have given me only satisfaction. He noticed that I was different, but I laughed things off. [The day of] New Year's Eve my husband was sick. The doctor gave

him codeine. I was tired, but I had to do the shopping. I got back dead tired. He was all dressed up and was drinking. I . . . told him off. He called up his girl friend, made a date, and left. I couldn't stand it any longer. I . . . took all the pills the doctor gave him. I thought it would show him." The patient had taken 16 *co* mg. codeine tablets. She was found in coma by her husband and brought to the hospital. She improved rapidly when her husband apologized and asked to be given another chance. When she left the hospital, she remarked, "You see, Doctor, my doing what I did served some purpose."

CASE 6.—C. L. was a 22-year-old married woman, the mother of 2 children. One night after an argument, her husband left her. She was depressed. A week later she discovered where he was living, called, and pleaded with him to return. He refused. Two weeks later she called again and threatened suicide. "Go ahead!" he exclaimed. The patient turned on the gas in the kitchen. She was admitted to the emergency ward in coma. When her husband came rushing to the hospital, crying, and asking for forgiveness, the patient improved quickly.

The diagnoses of the 10 people who attempted to kill themselves because of "incurable" illness were these: blindness, 2; multiple sclerosis, 1; cancer, 2; post-encephalitic Parkinson's disease, 1; rheumatic heart disease, 2; rheumatoid arthritis, 1; myocardial infarction, 1.

CASE 7.—F. H. was a married, Catholic housepainter with a history of cancer in his family. When he was 57 years old he was diagnosed as having cancer of the larynx, and he underwent a total laryngectomy. Soon after, he tried to end his life by taking barbiturates. Four months after his operation he attempted suicide again with gas. He left a note: "Life is not worth while." He was admitted to the hospital, released, and within a year succeeded in killing himself. There was no evidence that he would have died from his cancer.

Loneliness seemed to be connected with hostility. Both patients seemed to blame someone for their being alone.

CASE 8.—B. D., a 47-year-old divorced mother of 2, put it this way. "I was all alone. I wanted someone to be with me, particularly at night. I asked my sister; she refused. I asked my son. He refused, too. I brought him up with my own hands, Doctor. He saved all the money I gave him and got married. His wife refused to let him come to see me. I needed him. If someone had come, I wouldn't have done what I did." When the patient was admitted to the hospital her family visited her daily. She improved rapidly. Arrangements were made for her to live with her sister.

CASE 9.—M. B., a 29-year-old single woman, had been abandoned by her parents at 5 months. "I never thought of suicide. I called a doctor because I was in pain. He gave me a lecture because he thought I was pregnant. I am not. I was tired. I was angry because I was alone. I was mad at the doctor. That's why I did it. I guess doctors are not interested in you. They want your money."

No clear reason for suicide could be elicited from many of the psychotic patients. Their actions seemed impulsive.

CASE 10.—W. L. was a 31-year-old housewife, the mother of 2 children and a devout Catholic. Nine months after the birth of her second child, she was anxious, nervous, depressed, withdrawn, and preoccupied with religion. She exclaimed, "The fires of hell are eating me up!" A psychiatrist gave her 1 electric shock treatment and sent her home. Both he and her husband thought she was improved. One morning a week later, she seemed a little tense, but she was smiling when she waved goodbye to her husband. Two hours later she swallowed the contents of a can of "Drano." When she was admitted to the hospital, she had profound depression, strong paranoid ideation, and catatonic posturing. She was given surgical treatment for the burns of her esophagus for a month and custodial psychiatric care. Her mental state did not improve. She was transferred to a mental hospital with a diagnosis of schizo-affective reaction.

FOLLOW-UP

A questionnaire was sent to the 102 patients (37 males, 65 females) who had been released from the hospital for 4 or more years. Seventy-eight envelopes were returned marked "Address Unknown," and 11, "Deceased."

In the 24 questionnaires that were answered it was found that 7 of the former patients had committed suicide; 5 seemed to be doing well; and 8 were grateful for the help they had received at the hospital.

CASE 11.—M. D., a 29-year-old mother of 5 children described the effect of her hospitalization 6 years previously: "My spirits are excellent. In the hospital I finally discovered it was all my family troubles. It gave me time to think. My husband, seeing me there, realized how important the whole thing was. Thanks so much for your care."

From the charts as well as from the questionnaires, 4 of the 10 patients who had "incurable" illnesses are known to have killed themselves within 1 year after leaving the hospital.

DISCUSSION

Reasons for Suicide.—In the mélange of reasons given for the suicidal attempts, 2

major classifications seemed to stand out: *painful states,* defined here as unpleasant emotional conditions of being, and *reactions,* meaning defense mechanisms. *Reactions* seems to include 2 parts: *motives,* the expected results that incite to action; and *modes,* the ways of action, tools, weapons, or means.

If these classifications are put together, they form a pattern that may be typical of a suicidal human being. In essence, the scheme is a repetition of painful state, reaction painful state with reaction, and outside factor. As the motive of the reactions was always found to be the same, the alleviation of a painful state; the difference in reactions is in their modes.

At first the human being is assumed to be normal, in an unpainful state. Circumstances, unfortunately, engender unpleasant emotions in him. He enters a painful state. His reactions may change the form of his emotions and may produce symptoms. For a while these measures may seem to be satisfactory defenses. He is in a painful state with change in form of emotions or symptoms. Eventually, however, outside factors interrupt the usefulness of the patient's mechanisms and push him into an even more painful state (intensified painful state). His change of emotion or symptoms continue. As a reaction the human being may make a few attempts to reform the situation in his recent seemingly satisfactory state, but he seriously considers suicide. He exists now in an intensified painful state with a change in the form of his emotions or symptoms and with the serious consideration of suicide. A precipitating event in the environment makes the patient's few attempts appear futile and gives him acutely unpleasant emotions (acute painful state). The change in the form of emotion or the symptoms and the serious consideration of suicide have persisted. The patient uses the only reaction that seems possible: he attempts suicide.

There is a state of mind common to neurotics who are about to commit suicide and recognizable to trained observers. The word, *autoktonism* (from the Greek, *auto kteno*) is proposed to describe it. In the above scheme autoktonism seems to correspond to the intensified painful state with the change in form of emotions or symptoms and serious consideration of suicide. The pattern can be described more clearly by a chart (Fig. 1) and by a specific demonstration of its workings in neurotics and psychotics.

Patients with Neurosis.[2]—The circumstances which engendered unpleasant emotions were loss of loved one and illness. The painful states included hostility, loneliness, grief, and fear. In reacting, the patients changed the form of their emotions or developed symptoms in these ways: depression, obsessive compulsion, drug addiction, homosexuality, alcoholism, and "reaction to 'incurable' illness."

For a time they existed in an apparently satisfactory way with their emotions and reactions. Outside factors interrupted the usefulness of their mechanisms: loss of loved one (both homosexual and heterosexual), cut in drug supply of addicts, financial troubles. Jail, the prospect of hospitalization, and termination of psychiatric treatment were probably factors here, too. The intensification of the painful states may have been indicated by the complaints of tiredness and the suggestions that the patients had to act because of some power beyond themselves. "I could not help myself." "I did not want to do it, but I had to." They made a few attempts to improve their situations, telephone calls to bring their loved ones, for example, but they seriously considered suicide.

Precipitating events in the environment, unemployment, consumption of alcohol, "final" arguments, "crowning" refusals, and, possibly, jail, and the prospect of hospitalization, made the patients feel acutely painful emotions. They were left with only one reaction that seemed possible: suicide.

In using suicide as a means of alleviating a painful state, the patients seemed to have two different results in mind. Some patients seemed to expect that death would be less painful than their acute unpleasant emotional states. Others, however, seemed to expect that rearrangements of their environments would alleviate their painful states.

[2] The dichotomy, "neurotic and psychotic," is used for convenience, but it is realized that the differentiation is far from clear and that many patients with mild "psychoses" are diagnosed as "neurosis."

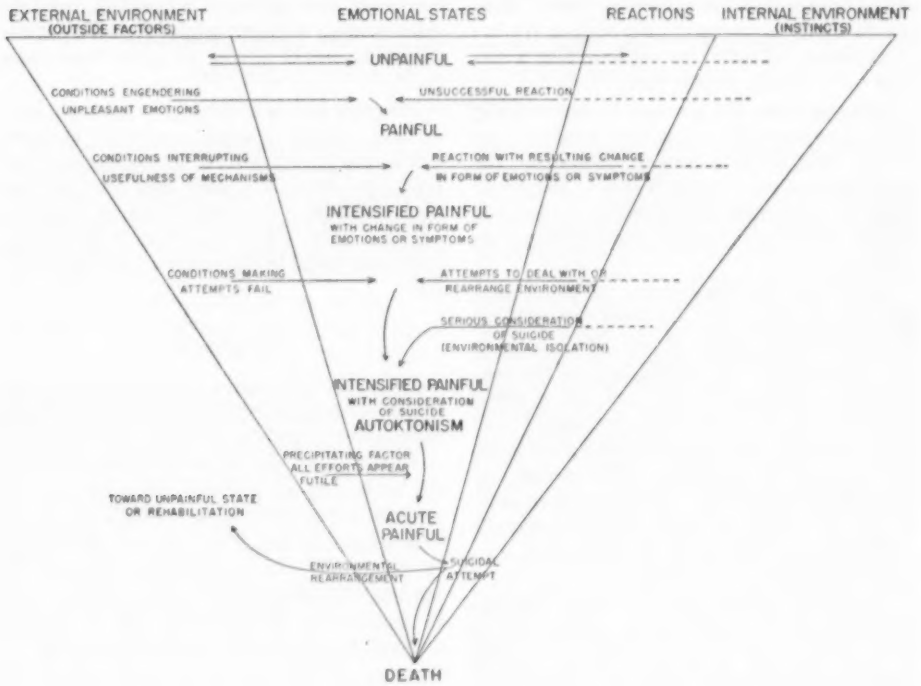


FIG. 1

They used their suicidal attempts as tools to manipulate the circumstances around them. They expected to live, not to die.

Patients with Psychosis.—In psychotic patients the reasons for suicide were usually obscure, so obscure, indeed, that they often remained unknown. Emotions appropriate to suicide or factors precipitating it were usually not apparent to observers. The patients were impetuous and therefore difficult to control. Evidence that they went through many of the stages in the pattern is lacking. Perhaps they did not. If they did, their progression was faster, their deterioration more rapid.

Among the psychotic patients, the only obvious circumstance engendering unpleasant emotions was the loss of a loved one. Their painful states included loneliness, guilt, hostility, and fear. Their changes in the form of emotions and symptom formations were delusions, hallucinations, and depressions. Their painful states and reactions persisted.

Outside factors that interrupted the apparent usefulness of the patients' mechanisms were not known. Indications of intensification of the painful states and of efforts to alleviate their situations were not observed. Their serious consideration of suicide was not realized. That they then existed in an intensified painful state with a change in the form of their emotions or symptoms and with the serious consideration of suicide could therefore not be demonstrated.

Events in their environment which made their efforts appear futile were lacking or hidden. The acute unpleasant emotional states in some of the patients may have been shown by changes in the quality of their hallucinations. That they felt suicide was the only way left to them was not apparent.

Ways of Preventing Suicide.—Although suicide is defined as the "act . . . of taking one's own life . . . intentionally"(11), a third of the patients who attempted suicide did not seem to have been intent on ending their lives. Ten out of 40 admitted that they had not meant to kill themselves. Others used

means inadequate for achieving death: dosage so small as to cause only temporary inconvenience, or water so shallow that a patient could hardly drown in it.

Some patients did succeed in rearranging their environment so that they could go on living. Suicide is a powerful weapon for social maneuvers. But it is also a dangerous weapon. Although the reason for attempted suicide may be a better life, the result may be a death.

What are the possibilities of preventing individuals from trying to kill themselves? Would the elimination of any of the reasons for suicide avert it? Could any of the reasons be eliminated? Many of the patients had their own answers as to what would have prevented their attempts at ending their lives. B. D. (Case 8) declared, "If someone had come to live with me. I wouldn't have done it." B. W. (Case 4) said, "He [the doctor] could have helped me if he wanted to . . . That would have stopped it."

Although the demands of many patients are impossible to fulfill, some of them can be met. Physicians and workers in mental health services should recognize chronically hazardous states in individuals and intervene before the states grow acute and crises develop. Given knowledge of the people in the communities which they serve, mental health workers may be able to spot potentially suicidal individuals, to help them, or to find help for them. Members of churches, also, are in a position to see potentially suicidal individuals, to help them, or to direct them to help. Community agencies often aid people with the problems of loneliness, unemployment, illegitimate pregnancy, and alcoholism.

Psychiatric treatment often relieves patients of their tensions, lessens their loneliness, encourages them to establish constructive relationships, aids them in recognizing new ways of finding pleasure, and helps them to handle their hostility.

Reorientation of patients with "incurable" illnesses should always be considered in medical and surgical care. Much can be done to relieve suffering even if pain cannot be eliminated.

More discriminate use of electric shock would be helpful. Had W. L.'s (Case 10) treatment been given in a hospital, her suicidal attempt with its frightful medical complications would almost certainly have been averted.

Hospital care is undoubtedly useful in preventing second suicidal attempts. It gives a dramatic background to the patient's appeal for help from his friends and relatives, removes him from the acute situation, provides physical care, offers psychiatric treatment, and often helps in solving his practical problems.

Summary

The cases of attempted suicide of 155 patients admitted to the Massachusetts General Hospital from 1944 to 1952, are reported.

Some of the literature on suicide is summarized, data on the patients are compared with it, and other general findings presented.

A scheme of action is evolved in an attempt to formulate the complicated reasons for suicide. Autoktonism is suggested as a word to describe the recognizable state of mind in neurotic persons about to kill themselves.

Some of the ways to prevent suicide are discussed.

ACKNOWLEDGMENT

We wish to express our appreciation to Dr. Stanley Cobb for his helpful suggestions and comments.

BIBLIOGRAPHY

1. Read, S. C. B.M.J., 1:631, Mar. 28, 1936.
2. Moore, M. New Eng. J. Med., 217:291, 1937.
3. Lendrum, F. C. Am. J. Psychiat., 13:479, 1953.
4. Piker, P. Am. J. Psych., 95:97, 1938.
5. Gordon, J. E., O'Rourke, E., Richardson, F. L. W., and Lindemann, E. The biological and social sciences in an epidemiology of mental disorder. A.J.M.S., 223:316-343, 1952.
6. A.M.A., 150:22-24, 1952.
7. Batchelor, I. R. C., and Napier, M. Attempted suicide in old age. B.M.P., 11:1186, 1936.
8. Zilboorg, G. Am. J. Psych., 92:1347, 1936.
9. Batchelor, I. R. C., and Napier, M. Broken homes and delinquency. Brit. J. Del., 4, 1953.
10. Durkheim, E. Suicide, a Study in Sociology. Trans. by Spalding, J. and Simpson, G. Glencoe, Ill.: The Free Press, 1951.
11. Webster's Collegiate Dictionary. Springfield, Mass: G. and C. Merriam Co., 1943.

ADJUSTMENT OF SIBLINGS IN LARGE FAMILIES [1]

JAMES H. S. BOSSARD, AND ELEANOR STOKER BOLL
PHILADELPHIA, PA.

Information on the extent of personal adjustment as revealed by the unique measure of sibling judgment, as well as on selected family factors related to such adjustments, appears as part of an intensive study of large-family living, made under the auspices of the William T. Carter Foundation at the University of Pennsylvania. The study covered a 6-year period and included 100 families, each with 6 or more living children. A total of 879 children were reared in these families.

The data on the life of these families were obtained chiefly from the siblings reared in them. The methods used in the gathering of the information included directed questionnaires, nondirective interviews, and written family-history documents. In 60 of the families, both parents were native-born whites of native-born white parentage; in another 17 families, they were native-born whites of foreign or mixed parentage; in 10, both parents were foreign born; 8 were Negro; and in 5 families, the father was foreign born and the mother native born. By religious preference, 26 families were Roman Catholic; 8 were Jewish; 3 were mixed Catholic and Protestant; and the remainder Protestant. By type of community, most of the families were reared in small-town, village, or farm communities. Twenty-four, however, were reared in either New York, Philadelphia, or Brooklyn.

Since the final test of what large family living does to children is the extent to which they develop into well-adjusted adults, an effort was made to determine this as specifically as the resources of the study permitted. To do so, each sibling informant was asked the following question: "Taking your brothers and sisters one by one, do you consider them (1) well adjusted, (2) not well adjusted, (3) medium adjusted?" The informants were invited to rate themselves, along with the other siblings. Many did so, but in each case an effort was made to find someone who knew the informant who would make such a rating.

How was adjustment defined? Virtually every informant raised this question before proceeding with the rating. The answer given was as follows: "If a person is capable of arranging his relations to other persons, at work if employed, in the home, and in social relations, with reasonable propriety and success, he is a well-adjusted person. Another word that might be used is to say that he is an adaptable person. The emphasis is upon his attitudes and patterns of response to social situations." This explanation was then discussed at length until the informant seemed to understand the measure to be utilized.

Proceeding on this basis, adjustment ratings from informants in 58 families were obtained for a total of 457 siblings, of whom 235 were males and 222 were females. This was the total number of siblings over 12 years of age in these families. Ratings for one or more, but not for all, siblings were obtained in the other 42 families, but since the record was not complete for all siblings these families and ratings are not included in the summary that follows.

Only 2 of the siblings included in this rating had been inmates in mental hospitals. The data therefore indicate the extent of adjustment and the lack of it, as revealed by the unique test of sibling judgment.

The question naturally arises: What is the value of such a rating? Manifestly, most of the persons making it had no professional skill nor used any scientific criteria. Moreover, there is the influence of their prejudices to consider. On the other hand, the informants who rated the other siblings had lived, on close and intimate family terms, with the persons whom they rated. And what better test of adjustment than close contact over an extended period can there be?

MAIN FINDINGS DERIVED FROM ADJUSTMENT DATA

1. Approximately 2 of every 3 siblings were reported as well adjusted, 1 of 4 was

[1] From The William T. Carter Foundation, University of Pennsylvania.

TABLE 1

ADJUSTMENT TOTALS AND PERCENTAGES, BY TOTALS, SEX, AND PERCENTAGES

Adjustment status	Total	Per cent	Males	Per cent	Females	Per cent
Well adjusted	287	62.8	151	64.2	136	61.2
Mediumly well adjusted	119	26.0	64	27.2	55	24.8
Poorly adjusted	51	11.2	20	8.6	31	14.0
	457	100.0	235	100.0	222	100.0

medium in his adjustment, and 1 of 9 was poorly adjusted (Table 1).

2. A larger proportion of male siblings than female were reported as well adjusted, or of medium adjustment. The percentage of poorly adjusted siblings was considerably higher among women than among men (Table 1).

3. In-between children show higher rates of good and medium adjustment than do first-born and last-born children. Of the latter 2 groups, the last-born have the better record. First-born siblings have by a wide margin the highest percentage of poor adjustment. First-born daughters in particular have a poor record of adjustment (Table 2).

4. Adjustment ratings classified by specific order of birth show that first-born children have the poorest record, with the second-born close behind. Fourth-born children have by far the best record, with 9 of 10 identified as well adjusted. Various bits of evidence revealed that fourth in the order of birth was the coveted position, as indicated in the preferences expressed by siblings who were dissatisfied with their order of birth. Table 3 shows the percentages of adjustment by rank order of birth for totals and for male and female siblings separately. Higher rates of adjustment for males prevail at all birth orders except at fourth, sixth, and tenth.

THE POORLY ADJUSTED

Of the 51 siblings identified by brothers or sisters as poorly adjusted, 20 were males and 31 females, i.e., 8.6% of the total number of males in the 58 families and 14% of the females. Approximately 1 of every 9 siblings was rated as poorly adjusted.

There were 5 families with 3 siblings each who were poorly adjusted; 8, with 2 each; and 20, with 1 each. In other words, 31 of the poorly adjusted siblings were found in 13 families; the total number was confined to 31 families. Twenty-five of the 51 families had no poorly adjusted sibling members.

The case records of the 33 families with poorly adjusted sibling members were read carefully with reference to any information that might bear on the lack of adjustment of a child member. From this analysis, the following facts emerge.

1. Thirteen of these families contained positive, and for the most part, critical references to an autocratic, domineering father or mother or both. These 13 families contained 24 poorly adjusted siblings, most of

TABLE 2

ADJUSTMENT, FIRST-BORN, IN-BETWEEN, AND LAST-BORN, BY TOTALS, SEX, AND PERCENTAGES

Adjustment status	Total	Per cent	Males	Per cent	Females	Per cent
First-born:						
Well adjusted	33	56.9	17	58.6	16	55.2
Medium adjustment	15	25.8	8	27.6	7	24.1
Poorly adjusted	10	17.3	4	13.8	6	20.7
In-between children:						
Well adjusted	222	65.1	115	67.2	107	62.9
Medium adjustment	83	24.3	43	25.1	40	23.5
Poorly adjusted	36	10.6	13	7.7	23	13.6
Last-born:						
Well adjusted	32	55.2	19	54.3	13	56.5
Medium adjustment	21	36.2	13	37.1	8	34.8
Poorly adjusted	5	8.6	3	8.6	2	8.7

TABLE 3

ADJUSTMENT RATINGS, BY RANK ORDER OF BIRTH, BY SEX, AND BY PERCENTAGES

Adjustment status	Total	Per cent	Males	Per cent	Females	Per cent
First-born:						
Well adjusted	33	56.9	17	58.6	16	55.2
Medium adjustment	15	25.8	8	27.6	7	24.1
Poorly adjusted	10	17.3	4	13.8	6	20.7
Second-born:						
Well adjusted	39	67.2	18	78.3	21	60.0
Medium adjustment	9	15.5	3	13.0	6	17.1
Poorly adjusted	10	17.3	2	8.7	8	22.9
Third-born:						
Well adjusted	34	58.6	22	62.9	12	52.2
Medium adjustment	16	27.6	9	25.7	7	30.4
Poorly adjusted	8	13.8	4	11.4	4	17.4
Fourth-born:						
Well adjusted	51	87.9	24	85.7	27	90.0
Medium adjustment	4	6.9	2	7.15	2	6.6
Poorly adjusted	3	5.2	2	7.15	1	3.4
Fifth-born:						
Well adjusted	39	67.2	18	72.0	21	63.7
Medium adjustment	13	22.4	5	20.0	8	24.2
Poorly adjusted	6	10.4	2	8.0	4	12.1
Sixth-born:						
Well adjusted	28	48.3	16	43.2	12	57.1
Medium adjustment	24	41.3	19	51.4	5	23.8
Poorly adjusted	6	10.4	2	5.4	4	19.1
Seventh-born:						
Well adjusted	23	65.7	18	69.2	5	55.5
Medium adjustment	9	25.7	6	23.1	3	33.3
Poorly adjusted	3	8.6	2	7.7	1	22.2
Eighth-born:						
Well adjusted	14	51.8	7	58.3	7	46.7
Medium adjustment	11	40.8	4	33.3	7	46.7
Poorly adjusted	2	7.4	1	8.4	1	6.6
Ninth-born:						
Well adjusted	11	68.7	5	71.4	6	66.7
Medium adjustment	4	25.0	2	28.6	2	22.2
Poorly adjusted	1	6.3	0	0.0	1	11.1
Tenth and over:						
Well adjusted	15	48.4	6	46.1	9	50.0
Medium adjustment	14	45.2	6	46.1	8	44.5
Poorly adjusted	2	6.4	1	7.8	1	5.5

whom were in the older birth orders, and it seems reasonable to suggest that, as the older children, they had to bear the brunt of the parental domination.

2. Supplementary to these were 5 additional families where the comments were not directed so much at the domineering behavior of the father as upon the exploitation of the children. In these, the siblings who were poorly adjusted were oldest daughters who were made to carry much of the burden and responsibility for rearing the younger children. In 2 of these cases, the sibling who rated them as poorly adjusted referred to the fact that they were suffering from persecution complexes.

3. Presence of an oversolicitous or irresponsible mother was stressed in 6 of these families, in which there were 10 poorly adjusted children. In addition, there were 4 more families where 10 siblings were reported as being "spoiled" to the point of poor adjustment, not by a parent, but by older brothers and sisters. All the poorly adjusted children in these 10 families were in the middle or lower birth orders. Criticism of the parents on the foregoing scores included, in a majority of cases, charges of favoritism toward some sibling or siblings.

4. There were 3 families in which 4 sibling members were identified as poorly ad-

justed because of physical defects or long-continued illness.

5. In the remaining 6 families, with 8 poorly adjusted siblings, no pertinent information could be found in the case records.

It seems important to add that there was not one family in which more than 3 children were poorly adjusted. It seems obvious, therefore, that the factors involved in lack of personal adjustment are at least individual, so that the factors that have been mentioned must be thought of as general and predisposing rather than specific and personal in their operation. Special features in a few cases can best be indicated by brief case summaries.

The first family has 10 children, 2 of whom were rated as poorly adjusted and 4 as mediumly so. The father is described as a strong man, who spoke very little, accepted the financial responsibility for his children, but showed very little interest otherwise. His temper was such as to interfere seriously with the happiness of the family. No one could assume any responsibility around the house so long as he lived. He completely dominated the family life and would brook no interference of any kind. The mother was easy-going, hard working, and completely cowed by her much older husband. The 2 oldest boys left home at 16, went into the armed forces, and never returned to live at home. The 2 oldest sisters early became interested in church work. All of the children but one were described as timid and shy, and showed other signs of having been cowed by their father. The one thing that has helped the children has been the fact that they have stuck together closely, "helping each other over the tough spots."

The next family has 13 children. The informant identified only one as poorly adjusted but 10 as being of medium adjustment. The authors were inclined to think that the term "medium" in several of these cases was questionable. The whole life of this family was dominated by the father's sternness. He ruled his family with a rod of iron, utilizing corporal punishment with frequency and severity. Apparently the entire family lived under the shadow of fear. The informant repeatedly spoke of not daring to do this or that; about being punished, and punishment invariably was physical. Temptations to rebel seemed to be constant among the siblings, but the informant said: "If we would have gotten out of line, we would have been beat to death." Even during the interview, the informant, who was middle-aged and no longer living at home, would look behind her before speaking of her father. Most of the children left home as early as possible, going their own way, and having almost no contact with each other in the years since.

The third family has 6 children, 2 of whom were reported as poorly adjusted and 3 as mediumly so. Both parents seemed to be immature, and were said to be always at cross purposes. "As I approached adolescence," said the informant, "I resented my father's strict control and harsh methods of punishment. To this day, I do not feel at ease with my father. During the early years of my life, my mother's temper caused me to bear the brunt of much harsh treatment, such as knocking me on the floor and kicking me. I may have deserved some punishment, but not of this kind or in such bitter anger. I used to go upstairs and try to hang myself, but never quite had the nerve or the power. For a time I turned to my mother for comfort from my father, but after I left home to work elsewhere, I rebelled against my mother's domination, and now, years later, I still wake up shuddering from dreams in which I have bitter conflicts with my mother, although we now get along well together the very few times we do see each other."

The final case is that of a family with more than a dozen children, 3 of whom are not well adjusted and 7 only medium. Concerning this family, the informant writes in part: "One thing which has been the plague of our family has been my mother's devotion to child psychology. She considers herself an authority on this subject. She devotes her time to reading all the latest books in this field and arguing theories with anyone that will listen. She spends much time with groups of people interested in child problems, and has served as leader in some of them. Rather than spend time with her own children, she spends it in reading about children in general. Most of us resent this, particularly since she does not practice anything of which she preaches except on her one pet daughter. My mother enjoys posing before people as being the mother of 'so many children' rather than in living with those that are her own."

Summary

The personal adjustment of 457 large family siblings, as made by the informants in 58 families, shows the following results.

1. Approximately 2 of 3 siblings were reported as well adjusted, one of 4 was medium in his adjustment, and one of 9 was poorly adjusted.

2. A larger proportion of male siblings than of female were well adjusted, and of medium adjustment.

3. In-between children show higher rates of good and medium adjustment than do the first and last born. Of the latter 2 groups, the last-born have the better record.

4. First-born children have the poorest record and fourth-born by far the best record.

5. Poorly adjusted children, considered collectively, tend to be grouped in homes in which the father is domineering, or the mother is ineffective and irresponsible, in which the children are exploited, and where health problems abound.

METHODS OF ADMINISTRATION OF SUCCINYLCHOLINE DICHLORIDE IN ELECTROSHOCK THERAPY WITH A DESCRIPTION OF A SIMPLE AND MODIFIED TECHNIQUE AND A SUCCINYLCHOLINE DICHLORIDE TEST

DAVID J. IMPASTATO, M.D., AND SEYMOUR BERG, M.D.
NEW YORK CITY[1]

INTRODUCTION

Succinylcholine dichloride (Anectine)[2] is rapidly increasing in popularity among psychiatrists using electroshock therapy. It is their common opinion that succinylcholine dichloride (SCC) is one of the best muscle relaxants presently available. Although there is unanimity of opinion as to the efficacy and usefulness of SCC, there are marked differences concerning the method of administration. We shall therefore review these various methods and briefly outline our own modified and simplified method.

METHODS OF ADMINISTRATION

Details of the methods of administration of SCC used by a number of authorities are given in Table 1.

Estimation of the Dose of SCC.—Most investigators give a fixed dose of 10-60 mg., or estimate the dose by the weight and muscularity of the patient. These methods do not take proper cognizance of the fact that SCC is hydrolyzed by plasma pseudocholine esterase and that the muscular response to a given dose is more dependent on the pseudocholine esterase titer than on the size and muscularity of the patient.

In patients with normal pseudocholine esterase titers, return of muscular power and breathing occur in 1-2 minutes; while in those with low titers the muscular relaxation and apnea are more severe, and of much longer duration. Respiratory paralysis lasting from 10 minutes to 3 days has been reported (11-17).

Pseudocholine esterase titer may be lowered in liver disease, cachexia, severe anemia, etc. Nerve gases and some weed killers—parathion and T.E.E.P., etc.—also lower the choline esterase titer. Low titers have been found in 1% of all patients, and in a much larger percentage in those showing prolonged apnea (11, 18). In patients suspected of low titers smaller doses of SCC should be given.

The Use of Ultra Short-Acting Barbiturates (USAB) in Conjunction with SCC.—While most authors use a USAB in conjunction with SCC, one (9) does not. When a USAB[3] is used, some mix it with SCC, while others give it in a different syringe. The latter do so because they are under the impression that the SCC and USAB cannot be mixed, as the barbiturate solution being alkaline will hydrolyze the SCC. This is only partly true. Although USAB do hydrolyze and inactivate SCC, it takes more than 5 minutes for sufficient hydrolysis to occur to make the SCC ineffective. The full effect of the SCC will be obtained if the 2 solutions are freshly mixed and used within 5 minutes. Murray has treated over 1,500 patients by using SCC alone, without USAB. Other investigators who have tried to give SCC without barbiturate found that most patients developed considerable anxiety and did not want to continue the treatment. This has been our experience in the few cases in which we have tried it.[4] We recommend that a barbiturate be administered in conjunction with SCC, the two mixed and given in the same syringe, as we have found this method safe, less cumbersome, smoother, less time-consuming, and acceptable to the patient.

A few psychiatrists (5, 10) employ anesthetists to administer the anesthetic and SCC. They usually put the patient to sleep by an

[1] Psychiatric Department of New York University College of Medicine and Bellevue Hospital.

[2] The Anectine used in this study was supplied by Dr. W. F. Colvin of Burroughs Wellcome and Co.

[3] Thiopental (pentothal), thiamylal (Surital), and hexobarbital (Evipal) have been used.

[4] Since we wrote this paper, one of us (D.J.I.) has given SCC without USAB without causing anxiety.

TABLE 1

DETAILS OF METHODS OF ADMINISTRATION OF SCC AS USED BY VARIOUS AUTHORITIES

Authors	Pre-medication	Anesthesia	Succinylcholine	Special procedures	E.S.T.	Oxygen
Holt, McCandless, Yacoubian & Mebed(1)	Atr. gr. 1/150 30 min. prior to E.S.T.	200 mg. 5% P (4 cc) rapid injection	10-40 mg. in with the pentothal	Special mouthpiece inserted which accommodates airway	30 sec. after inj.	Positive pressure via squeezing of rebreathing bag
Moss, Thigpen & Robinson(2)	Atr. gr. 1/150 "H" 60 min. prior to E.S.T.	500 mg. 5% P (10 cc) by slow injection	20-40 mg. in 5 cc given in 2nd syringe after P	.....	45-60 sec. after inj.	Same as (1) during induction and after E.S.T.
McDowell, Rahill & Tyndall(3)	Atr. gr. 1/100 "H" 30 min. prior to E.S.T.	5% P slow inj. body Wt./40 = dose in cc	50 mg. in 1 cc used. Body Wt./200 = dose in cc. Given slow after P injection	.....	45-60 sec. after inj.	Same as (1)
Price & Rogers(4)	Atr. gr. 1/75 I.V.	150 mg. 5% P (3 cc) with the Atr. in 4-5 sec.	Variable, about 10 sec. after P & Atr.	.....	60 sec. after inj.	Same as (1)
Lewis, Richardson & Gahagan(5)	Atr. gr. 1/50 to 1/150 via I.V. tubing	I.V. drip of 5% P or 4% Sur. until pt. asleep. Anesthetist used	20-80 mg. (av. 50-60 mg.) inj. slowly into tubing	Airway inserted at start of anesthesia	When anesth. states	Same as (1)
Richards & Youngman(6)	Atr. gr. 1/200 & Hyoscine gr 1/200 "H" 45 min. prior to E.S.T.	400-600 mg. P I.V.	30-60 mg. I.V. 2 min. later	Gag inserted in mouth	60 sec. after inj.	Same as (1)
Holmberg & Thesleff(7)	Methyscopolmine nitrate gr. 1/250 "H" 30-45 min. prior to E.S.T.	150 mg. P or Evipal I.V.	.3 mg./kg. body wt. together with P injected over 60 sec.	.....	20 sec. after inj.	Same as (1)
Hand(8)	None used	150 mg. P rapid injection	20-30 mg. in separate syringe	Artificial respiration by pressing on chest and spine while pt. lies on side, at rate of 15 times per second	10-20 sec.	None used
Murray(9)	None	None	20 mg. rapidly I.V.	.....	10 sec. after onset of facial twitching	If pt. doesn't breathe spontaneously, as in (1)
Alexander, Gilbert & White(10)	Atr. gr. 1/75 "H" 30 min. before E.S.T.	Rapid drip of .4% P. Anesthetist used	40 mg. av. injected into tubing when pt. comatose	Airway inserted	65 sec. after inj.	Same as (1)
Impastato & Berg	Atr. gr. 1/150 I.V.	100 mg. 5% P (2 cc) or 50 mg. 2½% Sur. (2 cc)	4-20 mg. rapidly with P & Atr. in single syringe	Test dose only prior to first Rx. 5 mg. SCC & 1 cc of 5% P or 2½% of Sur.	10-20 sec. after inj.	O_2 with positive pressure at end of convulsion

1. Atr.—Atropine.
2. E.S.T.—Electroshock Treatment.
3. "H"—Hypodermic.
4. Inj.—Injection.
5. I.V.—Intravenous.
6. P—Pentothal.
7. Sur.—Surital.

intravenous infusion of a dilute solution of an USAB and then slowly administer the SCC through the drip tubing. This procedure is too complicated and expensive to be recommended. In addition, we feel that it may be dangerous as, with this method, much larger doses of barbiturate and SCC are used.

The Rate of Injection of the SCC or SCC-Barbiturate Mixture.—Some investigators administer the drugs quickly within 10 seconds; the majority, however, inject them slowly in from 30-60 seconds or longer. The preference of giving SCC or SCC-barbiturate injections rapidly or slowly is determined principally by the experience of the operator. When either barbiturate or SCC is administered slowly, larger amounts are needed to produce the desired effect; when they are given quickly the same effect can be obtained with about one half the amount of the drugs. SCC and USAB seem to augment each other's effect. We recommend the using of small doses rapidly given, as, everything else being equal, fewer untoward reactions are to be expected by using smaller doses.

Use of Atropine Sulfate.—Practically all investigators, with the exception of Hand, use atropine sulfate in doses from 0.4-1.2 mg. (1/150 to 1/50) subcutaneously, ½ to 1 hour before treatment, or intravenously just before treatment. Some administer the atropine and barbiturate together in the same syringe just prior to the administration of SCC, while Lewis *et al.* administer it through the intravenous tubing after the patient is asleep. Holt administers atropine, SCC, and barbiturate together in the same syringe. Atropine may also be given sublingually 30 or more minutes prior to the SCC injection. The exponents of subcutaneous atropine feel that its full antivagal effect can be obtained only in this manner; and intravenous injection just prior to electroshock treatment does not allow enough time for full physiologic effect. We have used atropine routinely in the same syringe with the SCC and barbiturate and, in the majority of patients, have controlled salivation quite well. In the occasional patient who salivates excessively following this technic, we give the atropine subcutaneously ½ hour prior to the treatment.

Use of a Mouthpiece.—Although most investigators use a mouthpiece, we feel that this practice is unnecessary and contraindicated in most patients, inasmuch as the mouthpiece irritates the buccal mucosa and produces salivation, which we are trying to prevent. Biting of the tongue does not occur when no mouthpiece is used if, during the fit, the patient's mouth is held closed.

Use of an Airway.—Some authorities use an airway routinely on all patients. We do not feel that it is routinely indicated as we have seldom found need for it in our patients, and have used it only in an occasional patient who was obstructed following the electroshock treatment.

Use of Restraint and Hyperextension of Spine.—Murray restrains his patients only by holding their hands across their chests. Holmberg and Thesleff do not use restraints except to press the patient's jaws together on a wide rubber spatula. Hyperextension of the spine is not advised or used by any of the investigators. Indeed, there is no necessity for hyperextending the spine or holding the patient when the SCC-EST treatment is properly given.

Time of Shock Treatment Following SCC.—EST has been administered from 10 seconds to 2 minutes following the injection of SCC. As each worker attempts to give the shock at the time of maximal paralysis, the marked variation in the time of the shock is due to the difference of opinion as to when this occurs. In general, the higher the concentration of SCC in the blood, the sooner will paralysis occur. If SCC is injected quickly, paralysis will occur quickly; if injected slowly, paralysis develops slowly. Inasmuch as the action of SCC lasts only 2-3 minutes, it appears that those who wait 2 minutes after the administration of SCC to give the EST are waiting too long. Most authors agree that the cessation of fibrillations usually marks the time of optimal paralysis. Fibrillations cease within 10-20 seconds after the quickly (5-10 seconds) given injection of SCC, and EST should be given at that time. There is the rare patient in whom full paralysis develops only after 50-60 seconds when SCC is given rapidly. A carefully administered test dose of SCC (see below) will expose these late reactors, and shock may be given them 50-60 seconds after the SCC.

The Use of Oxygen.—All observers, except Hand, use oxygen 100%, under pressure, more or less routinely. Hand turns the patient on his side at the end of the convulsion and administers artificial respiration by pressing on the chest rhythmically 15 times a minute; Murray administers oxygen only if the patient does not resume breathing one minute after the completion of the SCC injection; some administer oxygen immediately after the completion of the SCC injection, until the shock is given, resume it at the end of the convulsion, and continue until the patient resumes breathing. Lewis *et al.* administer oxygen as soon as the patient's breathing is depressed by the intravenous drip pentothal solution and continue it through the administration of SCC, EST, and through the convulsive seizure and cease only when spontaneous breathing has returned. Most workers oxygenate the patient by rhythmically pressing on the anesthesia rebreathing bag. Some use automatic respirators. We have been using the Demand Pneophore,[5] which we find very satisfactory.

From the experience of Hand, we might conclude that oxygen is not absolutely necessary. His procedure of not using oxygen is not unique; it has also been followed by Murray and by ourselves in a number of patients who resumed spontaneous breathing at the end of the convulsion or 5 to 10 seconds later. In these patients, we did not use any form of artificial respiration at any time. We do not see any advantage of oxygenating the patient immediately following the injection of SCC, during the shock treatment and during the convulsion. In our opinion, oxygenation at the end of the convulsion is sufficient in most patients.

Type of Electroshock Machine Used.—Most workers have used the classic alternating current (AC) machines. Alexander *et al.* have used the alternating current as well as a unidirectional current machine. We have been using a unidirectional machine. The few fractures so far reported following SCC(7, 9, 19, 20) occurred when the conventional AC machines were used and a perivenous or insufficient injection of SCC was given—the unhappy combination producing an inadequate muscle paralysis and a strong convulsion. At least some of these fractures might have been avoided if unidirectional currents, which make it possible to induce a mild convulsion with a very gradual onset, had been used.

[5] Manufactured by The Mine Safety Appliances Co., Pittsburgh, Pa.

METHOD OF ADMINISTERING SCC AND TEST PROCEDURE

We administer SCC together with a barbiturate. At the time of the first treatment, prior to the administration of the full therapeutic dose, we administer a test dose of 5 mg. of SCC and 1 cc. of the barbiturate solution [6] —that is, either 50 mg. of thiopental or 25 mg. of thiamylal. The barbiturate is given to test any sensitivity the patient might have to it. The SCC is given to see how much muscular weakness he develops with this small dose. Prior to the administration of this test dose, the patient is assured that, although he might feel some weakness and discomfort, this will be of short duration. The strength of his hand grip is ascertained by asking him to squeeze the examiner's hand. The injection is given as quickly as possible. In a few seconds, he is again asked to squeeze the examiner's hand as strongly as possible. In this manner, the resultant degree of muscular weakness and, accordingly, the therapeutic dose of SCC are determined. The strength of the patient's grip should be ascertained intermittently for a full minute. All our patients have taken this test very well. Should the barbiturate make the patient somnolent and uncooperative, the SCC test dose should be repeated without the barbiturate as soon as he awakens. Within a few minutes of the test, the patient is ready to take his therapeutic dose. In the same syringe are mixed 0.8 mg. (1/75 gr.) of atropine, 4-30 mg. of SCC (according to test response), and 2 cc. of the barbiturate. This is given intravenously through a small 26-gauge needle as rapidly as possible (within 5 to 10 seconds), and when the fibrillations cease, 10 to 20 seconds later, the shock is given. At the end of the convulsion, the patient is given oxygen under positive pressure for

[6] The test can be simplified by giving only the 5 mg. of SCC.

½ minute or so, until he begins to breathe spontaneously, at which time he is turned to his side to recover fully from the treatment. The test dose is given only on the first treatment. During the first shock treatment, the strength of the convulsion is carefully observed, so as to estimate the dose of SCC to be given on the next treatment. This dose may be smaller or larger than the one just given.

We do not hyperextend the patient's back, hold him, or use a mouthpiece. We prevent biting of the tongue merely by making sure the jaw is closed, by supporting it with one hand, during the convulsion. We do not use an airway. The machine we have been using so far is a unidirectional machine, manufactured by Reiter. We do not employ an anesthetist to help adminster the treatment.

By predetermining the therapeutic dose according to the response to the test dose, we have, in most patients, come quite close to administering the right physiological dose of SCC for the muscular weakness we expected.

In administering SCC routinely, our aim is merely to weaken the muscles about 50%, as with this amount of reduction of muscle pull, the vast majority of fractures will be obviated. Accordingly, we need smaller doses of SCC to produce this effect. On the other hand, in patients with fractures, we do not hesitate to give large enough doses to cause complete immobilization of the muscles. We have found, in using small doses, that many patients do not need oxygen after the convulsion as they resume breathing immediately or a few seconds following the end of a convulsion.

Summary and Conclusions

1. Succinylcholine dichloride (SCC) is a valuable adjunct in electroshock therapy.

2. SCC is one of the best muscle relaxants presently available.

3. A number of methods of administering it are outlined. Our own is described and the more important technical points discussed.

4. We have devised a simple test, which has made it possible for us to determine, at the time of the first treatment, the therapeutic dose required for the best muscle relaxation.

5. Routinely with all patients undergoing electroshock therapy, our aim has been to cause only partial paralysis by using small doses of SCC. However, when used in the presence of fractures, we advise larger doses so that a complete, or nearly complete, muscular relaxation to the point of temporary paralysis is produced.

6. We have not had a single fracture in 300 patients treated with our method.

BIBLIOGRAPHY

1. Holt, W. L., Jr., McCandless, F. D., Yacoubian, J., and Mebed, A. A. K. Confinia Neurologica, Proceedings of the 9th Annual Meeting of the Electroshock Res. Assoc., **13**: 313, 1953.

2. Moss, B. F., Thigpen, C. H., and Robinson, W. P. Am. J. Psychiat., **109**: 895, 1953.

3. McDowell, D. M., Rahill, A., and Tyndall, J. A. J. Irish Med. A., **31**: 240, 1952.

4. Price, J. M., and Rogers, W. J. B.M.J., **1**: 1027, 1952.

5. Lewis, W. H., Richardson, D. J., and Gahagan, L. H. Succinylcholine and gallamine in electroshock therapy: A comparative study with particular reference to cardiodynamics. Read at the combined meeting of the N. Y. Neurolog. Soc. and the Section on Neurol. and Psychiat. of the N. Y. Acad. Med., Nov. 1953.

6. Richards, H., and Youngman, H. R. B.M.J., **1**: 1334, 1952.

7. Holmberg, G., and Thesleff, S. Am. J. Psychiat., **108**: 842, 1952.

8. Hand, M. Personal communication, 1954.

9. Murray, N. Confinia Neurologica, Proceedings of the 9th Annual Meeting of the Electroshock Research Association, **13**: 320, 1953.

10. Alexander, L., Gilbert, I. E. and White, S. E. Confinia Neurologica, Proceedings of the 9th Annual Meeting of the Electroshock Res. Assoc., **13**: 324, 1953.

11. Bourne, J. G., Collier, H. O., and Somers, G. F. Lancet, **1**: 1225, 1952.

12. Evans, F. T., Gray, P. W. S., Lehmann, H., and Silk, E. Lancet, **1**: 1229, 1952.

13. Durrans, S. F. Lancet, **2**: 539, 1952.

14. Harper, J. K. B. M. J., **1**: 886 and **1**: 1352, 1952.

15. Hurley, M. J., and Munroe, A. B. B.M.J., **1**: 1027, 1952.

16. Grant, G. B. M. J., **1**: 1352, 1952.

17. Sherman, D. A. B. M. J., **1**: 1135, 1952.

18. Day, B. L. B.M.J., **2**: 162, 1952.

19. Murray, N. Further experiences with anectine. Unpublished, Sept., 1953.

20. Wilson, W. P., and Nowill, W. K. A. M. A. Arch. Neurol. & Psychiat., **71**: 122, 1954.

CHLORPROMAZINE: ALONE AND AS AN ADJUNCT TO GROUP PSYCHOTHERAPY IN THE TREATMENT OF PSYCHIATRIC PATIENTS[1]

RICHARD C. COWDEN, PH. D., CHILLICOTHE, OHIO, M. ZAX, A. M., J. ROSS HAGUE, M. D., AND R. C. FINNEY, M. D.[2]
GULFPORT, MISS.

This study examines the efficacy of chlorpromazine with schizophrenic patients on the disturbed ward of the acute-intensive treatment service, alone and as an adjunct to group psychotherapy. Alexander(1, p. 410) stresses the fact that "psychotherapy may be greatly and at times immeasurably facilitated" by physical treatments. This is especially true in severely disturbed patients who are highly inaccessible. Various drugs have been used to quiet actively disturbed patients; all have their liabilities in requiring constant supervision or leaving the patient in a comatose or stuporous state for varying periods. Such treatment quiets the patient temporarily but usually prevents any immediate psychotherapy. Since the primary difficulty in providing psychotherapy for this type of patient is establishing rapport with them, we used chlorpromazine as a means of decreasing the inappropriate defensive activity and instigating a new, more appropriate, defense. We also attempted to determine the relative effectiveness of the drug used alone.

Chlorpromazine promises the benefits of other pharmaceutical agents but few of the liabilities. The physiological effects are described by Lehmann and Hanrahan(7) and Kinross-Wright(6). Theoretically, the drug is supposed to have a depressive action on the central nervous system, probably via the diencephalic region, and as a result lessens psychomotor excitation. The current literature has all been extremely favorable (2, 6, 7, 11). These studies discuss the drug in terms of remission of symptoms; they do not suggest that any great personality change occurred.

Adherents of psychotherapy as a healing process for neuropsychiatric patients have been extremely voluble but at times have been severely criticized(4). Most of the relevant literature, however, has been more realistic and rational than Eysenck's critique (9). One of the prime difficulties in evaluating the effect of psychotherapy has been in measurement. What is recovery? What is improvement? What are the goals of psychotherapy? The terms "cured" and "recovered" are relatively meaningless unless objective criteria or baselines for each patient are established before therapy is started. Zubin and Windle(12) cite several conditions that must be considered in the therapy study, one of which is criteria for outcome. Another problem mentioned by Rosenzweig(9) is in the definition of a control group. Without doubt, all control groups in hospital experiments receive additional sympathy and attention from the personnel. This was observed during this experiment and is reported by Hopkins(5).

METHOD

Twenty-four schizophrenic patients residing on a disturbed ward were selected for the experiment. They were rated by 2 ward attendants on an 11-point behavioral rating scale devised for this purpose. This rating scale (Fig. 1) was checked for reliability before being used and the resultant correlation was .66. On the basis of this scale the patients were assigned to one of 3 groups. The data referring to age, behavioral rating, and length of hospitalization for each group are summarized in Table 1. None of those differences is statistically significant. However, the apparently large difference in length of hospitalization is considered later in greater detail. All the patients had been subjected to insulin coma and electroconvulsive therapy without any remarkable change occurring. One patient in each group had received a lobotomy. All were overtly psy-

[1] From the V.A. Hospital.

[2] The authors wish to thank Nelson Ribble, psychology trainee of the University of Florida, for serving as co-therapist and for his description of the psychotherapy sessions.

chotic and were diagnosed schizophrenic reaction. At the beginning of therapy, with the possible exception of 2, all were quite withdrawn and unable to communicate to the therapists in any logical or coherent fashion. Several were actively hallucinated, displayed inappropriate expression of affect, and were manneristic in behavior. Group A received chlorpromazine and psychotherapy; Group B received only chlorpromazine; and Group C received no special treatment, acting as the control group. One subject was lost from Group C leaving a total of 23.

FIGURE 1

BEHAVIORAL RATING SCALE

Put the number of the statement which best describes the patient beside his name.

1. Requires careful watching. Refuses to care for self. Keeps to himself on the ward and takes part in no activities.

2. Cares for self very little. Associates with others on the ward only occasionally. Needs a good deal of supervision.

3. K Ward (Transfer to less violent ward).

4. Occasionally enters into games with the others. At times works around the ward and is somewhat cooperative.

5. Goes to some activities off the ward and takes some responsibilities while on the ward. Gets along fairly well with the other patients. Needs some supervision at times.

6. E & J Ward (Transfer to ward permitting work details).

7. Goes to many activities off the ward and gets along well with the other patients. Has periods when he is acutely disturbed so that he needs some supervision.

8. Goes to nearly all activities without urging. Volunteers for jobs on the ward. Engages in games with the other patients. Needs very little supervision.

9. Requires a minimum of supervision and takes part in all activities. Is something of a leader among the patients and works well on the ward.

10. G Ward (Transfer to recuperation ward with privileges).

11. G Annex (Transfer to open ward with privileges and regular gate passes).

Instructions: No one patient may fit all that is said in any one statement but notice that from No. 1 to No. 11 less supervision is required, and as you go from No. 1 to No. 11 the patient tends to have more to do with others. Whether a patient fits a statement exactly or not, rate each one.

TABLE 1

MEAN AGE, BEHAVIORAL RATING, AND LENGTH OF HOSPITALIZATION

Group	Age	Behavioral rating	Hospitalization (In months)
A	32.6	2.25	22
B	28.5	2.62	23
C	33.1	2.93	35

Medication was started on October 11, 1954, and ended February 11, 1955. Dosage started at 25 mg., t.i.d., and was adjusted thereafter according to behavior. Maximum dosage was 150 mg., q.i.d., the average 100 mg., t.i.d. No untoward effects have been noted in the experimental groups. There was some evidence that with a t.i.d. schedule, too long a time elapsed between the last dose of one day and the first dose of next day. This was corrected by an additional dose at 2:00 a.m. At the completion of the experiment all patients were on oral medication, although several had been on parenteral medication at the beginning. All are now eager to receive the medication. At the beginning many were quite resistive to it. The following laboratory work was completed on the 16 experimental patients: (1) Liver and biliary function—serum bilirubin, alkaline phosphatase, thymol turbidity; (2) Hematology—white blood count, differential count; (3) Urinalysis—especially for bile (Huppert-Nakayama tests). Only one patient showed an elevation of serum bilirubin and aklaline phosphatase. Retesting 10 days later showed a remission to normal values. This patient showed no clinical or subjective evidence of disturbed physiology.

The 1-hour group psychotherapy sessions, held 3 times per week, did not follow the tenets of any particular school, but may best be described in terms of the general aims or goals which the therapists kept in mind. The aim was to create a group feeling in each member through a sense of comfort and security by being as permissive as possible and reflecting feelings as well as possible. Efforts were made to avoid uncomfortably long silences by raising questions if necessary and encouraging each member to comment. In the early stages it was necessary for the therapists to carry the discussion a large portion of the time; after a few weeks the group itself was increasingly able to generate discussion, particularly when each session was started with a brief summary of the preceding one. The summary could be used effectively to make interpretations or to re-

inforce those offered in preceding sessions and even to focalize discussion in a given session. Interpretations were made very sparingly and often at a rather superficial level, and even then only if it was felt that the patients for whom they were intended appeared relatively comfortable and secure. At the end of the 4-month period a definite group feeling had been created wherein the majority of the members felt fairly secure and willing to enter into group discussion.

The measurements of improvement are purely behavioral ones, none of which required the subjective clinical judgment of any of the professional staff members. They include the following: (1) Ratings by 2 attendants on an 11-point behavioral rating scale (made 1 week before medication began and again on the day medication was stopped 4 months later); (2) decline in number of neutral wet packs; (3) decline in number of ECT received; (4) decline in number of fights engaged in; (5) decline in number of disturbed reports made by the nurses; (6) transfer to a better ward requiring a higher level of integration; (7) discharge. The number of packs, ECT, fights, and disturbed reports was determined for the 4 months prior to medication and compared with the 4 months during which the patients received the drug.

These are all behavioral measures since we did not expect any dramatic personality changes to occur over a 4-month period. Obviously certain subjective signs of improvement have been neglected, but these have already been amply reported in the literature. However, psychological testing, including the Bender-Gestalt, the H-T-P, a modified version of the TAT, and a sentence completion test, was done on 16 of the patients. The prognostic ability of these tests has been discussed elsewhere by the senior author(3).

RESULTS

The differences between the pre- and post-behavioral scale ratings by the 2 ward attendants were first considered; thus the amount of change in each subject was considered with reference to his own original level. The rating used for tabulation was the mean of the ratings by the 2 attendants. A parametric analysis of variance yielded an F-value of 7.68 which for 2 and 20 degrees of freedom is significant beyond the .01 level. In other words, the difference in amount of improvement shown by the 3 groups over the 4-month period was quite remarkable. This improvement must be credited to the treatments, drug and therapy. Since the Bartlett's test for homogeneity of variance was done and the corrected chi-square of 3.27 for 2 degrees of freedom found not significant, it was legitimate to apply Student's t-test. Comparison of the pre-post difference scores for Group A and Group B gave a t-value of 1.47 for 14 degrees of freedom. The drug-plus-therapy group differed from the drug-only group at between the .10 and the .05 point. Although not significant, it strongly suggests that the drug plus group therapy is sufficiently more effective than the drug alone to warrant the use of the combined treatment. A comparison of Group A and Group B with Group C gave respective t-values of 3.81 and 3.11 for 13 degrees of freedom. Both experimental groups differed from the control group at the .005 point. The Kruskall-Wallis test, a nonparametric analysis of variance, gave a chi-square of 4.64 and for two degrees of freedom was significant at between the .05 and .025 point. This strengthens the first analysis as this test is not influenced by a few cases of extreme improvement, but rather is a measure of the consistency and direction of the improvements within the groups. In addition a parametric t-test for matched data was used to compare the change which had occurred *within* each group itself. The pre- and post-treatment ratings of Group A provided a t-value of 4.53 which for 7 degrees of freedom was significant at less than the .01 level. Group B gave a t-value of 4.49 which was significant at the .01 level. Group C gave a t-value of .49, which for 6 degrees of freedom gave a P-value greater than .60—not significant.

In analyzing the data referring to the number of packs, ECT, fights, and disturbed reports, nonparametric statistics were used. Wilcoxon's nonparametric t-test for paired replicates was used along with the chi-square to compare the 4 months before medication with the 4 months following its introduction for each measure. The results are presented in Table 2. Because of the difference in aver-

TABLE 2

BEHAVIORAL CHANGES AS A RESULT OF TREATMENT

Group	Measure	Pre-	Post-	Chi-Square	Wilcoxon R
Drug and Therapy (A)	No. of Packs	19	2	12.18*	4†
	No. of ECT	42	8	21.78*	0*
	Dist. Reports	32	19	2.82	11
	Fights	15	7	2.22	9.5
Drug only (B)	No. of Packs	16	5	4.76†	14
	No. of ECT	20	24	.20	15
	Dist. Reports	37	15	8.48*	2†
	Fights	6	4	....	11
Control (C)	No. of Packs	0	0	....	..
	No. of ECT	21	18	.10	10
	Dist. Reports	12	1	7.70*	0†
	Fights	3	2	....	7

* P-value less than .01.
† P-value less than .05.

age length of hospitalization for the 3 groups (Table 1) an analysis of covariance was done to determine the effect of this factor on the results so far presented. This analysis yielded an F-value of 5.12 which for 2 and 19 degrees of freedom was significant at the .01 point. These results show that length of hospitalization has some influence on the effectiveness of the drug. This was further established when a rank order correlation of the patients in the 2 experimental groups gave a rho of .62 which showed a significant correlation between length of hospitalization and improvement. However the time factor alone is not a sufficient reason to explain the difference in improvement of the 3 groups. When this correlation is controlled the groups still differ significantly in degree of improvement.

No major changes occurred on the psychological tests with the exception of the Bender-Gestalt Visual-Motor test.

DISCUSSION

The result of this experiment adds strong support to previous studies that showed the value of Thorazine as a treatment for neuropsychiatric patients. It also highlights the added efficiency of the drug when it is used in conjunction with psychotherapy. Although the psychotherapy was in effect for only 4 months, the improvement in all respects of this group over the other 2 was consistent. Measurable change did occur and would have been further enhanced had the experiment been continued. The results affirm Alexander's concept of psychotherapy "as an ancillary technique in the treatment of the major psychoses in that it enhances the quality rather than the rate of improvement (1, p. 206)." They also show how a physical treatment can facilitate psychotherapy. In other words, the two appear to be mutually enhancing. The results do not permit a statement on the efficiency of group psychotherapy by itself since the group did receive the drug. It is very likely that psychotherapy without the drug would have been extremely difficult and it would have taken much longer to achieve the first goal of therapy—making the patient comfortable in the group.

However, the main purpose of this study was to determine the efficiency of chlorpromazine and the most effective way to use it. It is possible to say that the drug is effective in quieting those patients who are behavioral problems. This is evident by the reduction in packs and ECT required. However, even these results are open to question when one considers that much of the significance of the chi-square in Table 2 is due to extreme changes in a few patients. The Wilcoxon t-test, which is not influenced by extreme cases, does not substantiate the chi-square in all measures. An interesting observation, although not statistically significant, is that the drug made some of the patients worse in terms of behavioral problems. Two of the control patients required additional ECT; 1 drug-plus-therapy patient required additional packs; while 4 drug-alone patients required additional ECT or packs. One patient required an increase of 8 ECT's and another an increase of 5 ECT's following medication.

This difference is not statistically significant. The group that received only the drug showed an actual increase of required ECT from 20 to 24. The control group showed a decrease of 3 ECT's and the drug-plus-therapy group required 34 fewer ECT's. After 8 weeks of observation, 3 drug-plus-therapy patients have been released from the hospital and 2 of the drug-alone group have been released. Five of the remaining patients have been restored to a Thorazine regime.

The drug appears to have its greatest value in quieting disturbed, anxious patients and in making them more amenable to other therapies. The group which received psychotherapy in addition to the drug made the greatest all-round improvement and have maintained it more successfully. The significant correlation between length of hospitalization and improvement points out another limitation of the drug. Its effectiveness varies inversely with length of hospitalization. However, this must be qualified by the statement that time alone is not the important factor but what occurs in that time. Those patients who maintain a high level of anxiety still benefit from the drug even though there is long hospitalization. Thorazine appears to be most effective for those patients who maintain a high level of anxiety and who have a relatively brief period of hospitalization when used in conjunction with group psychotherapy.

It is possible to theorize about these results in regard to mode of operation of the drug. Since anxiety reputedly has its basis in the hypothalamus and the autonomic nervous system, we might say anxiety is basically a physiological experience. The patients who continue to be anxious and to be behavioral problems are those whose autonomic nervous systems continue to function in a more or less normal manner to maintain homeostasis. They could be characterized as being at what Selye calls the stage of resistance(10). They have not yet reached the stage of physiological exhaustion found in some schizophrenics as reported by Pincus and Hoagland(8). Nor have their psychological defenses crystalized enough to relieve their anxiety and provide satisfaction. They are still trying to reintegrate their personalities through inappropriate defenses. It is this type of patient that one might expect to benefit from chlorpromazine. A well-structured paranoid would not gain much from the drug; nor would an apathetic, flattened, back-ward schizophrenic. This apathetic flattened stage of schizophrenia can be arrived at either through exceptionally strong withdrawal, repressive defenses, or through a bio-chemical change caused by physiological exhaustion of homeostatic mechanisms. In most cases it is probably the latter. These cannot be touched by psychological treatment or pharmaceutical treatment that decreases activity of the hypothalamus. This is indirectly agreed upon by most analysts and psychotherapists who stress the requirement of anxiety in a patient to effect a cure.

Summary

Eight schizophrenic patients received chlorpromazine and group psychotherapy, 8 received only chlorpromazine, and 7 patients acted as control. The two groups receiving the drug improved significantly more than the control in practically all measures. The 8 patients receiving group therapy in addition to the drug showed greater improvement than the drug-only group. Chlorpromazine is an effective adjunct to other therapies when used properly. It is not effective with all types of patients.

BIBLIOGRAPHY

1. Alexander, L. Treatment of Mental Disorder. Philadelphia: Sanders, 1953.
2. Cowden, R. C., Zax, M., Finney, R. C. Arch. Neurol. Psychiat., in print.
3. Cowden, R. C., Deabler, H. L., and Feamster, J. H. J. Clin. Psychol., in press.
4. Eysenck, H. J. J. Consult. Psychol., 16: 319, 1952.
5. Hopkins, L. In press.
6. Kinross-Wright, V. Postgrad. Med., 16: 297, 1954.
7. Lehmann, H. E., and Hanrahan, G. E. Arch. Neurol. Psychiat., 71: 227, 1954.
8. Pincus, G., and Hoagland, H. Am. J. Psychiat., 106: 641, 1950.
9. Rosenzweig, S. J. Abn. Soc. Psychol., 49: 298, 1954.
10. Selye, H. J. Clin. Endocrinology, 6: 117, 1946.
11. Winkleman, N. W. J.A.M.A., 155: 18, 1954.
12. Zubin, J., and Windle, C. J. Abn. Soc. Psychol., 49: 272, 1954.

DISCHARGE AND READMISSION RATES IN 4,254 CONSECUTIVE FIRST ADMISSIONS OF SCHIZOPHRENIA [1, 2]

ROBERT H. ISRAEL, M.D., AND NELSON A. JOHNSON, M.S.W.

WARREN, PA.

The literature on prognosis in schizophrenia is confused and contradictory. Overall statistics on discharges of schizophrenic patients from mental hospitals are usually quite misleading because they report on discharge rates in relationship to resident populations in the hospitals.

There is, to the best of our knowledge, no study which has followed massive numbers of first admissions to one hospital over such a long period that one could derive a historical picture of any changes in prognosis for recent schizophrenic admissions compared with the patients of 10, 20, or 40 years ago. The present study undertakes to provide such information.

For years this hospital, along with every other mental hospital in America, had been reporting how many patients were in residence at the beginning of a year, how many had gone home and come in during the same time, and how many remained in the hospital at the end of the year. For administrative purposes, such data were useful. But for insight into prognosis or changing rates of discharge, the figures were essentially worthless, because all discharges were reported only in their relationship to the hospital's resident population.

Our studies have taken place over the last 15 years and are based on a card file which shows every movement into and out of the hospital for every first admission from the year 1913 to the present date. Data are now available on over 20,000 such consecutive first admissions.

The word "discharge" as reported in this paper has no reference to the bookkeeping term; here it means physical movement, alive, out of the hospital, of patients approved by the medical staff for return to community life. Our figures do not include visits for holidays, brief vacations, or similar short leaves in which the patient must return to the hospital at the end of a specified time. The word "readmission" means literally that and has no reference to "commitment." It refers to any patient returned for further care, whether one day, one month, or many years after the medical staff gave approval for the patient's discharge to community life. This type of literal follow-up of every movement in and out of the hospital is much more realistic than those reports which ignore "convalescent leave," "parole," "return from leave," and other actual movements in or out and simply report on the bookkeeping status of patients.

This study employs no definitions of "improvement" or "recovery." The single criterion used is whether the patient's improvement was such that he was actually released from the hospital and whether he was or was not readmitted. We seek simply to provide some of the long-needed information on how many patients can leave the state hospital and how many must return. We hope to stimulate similar studies in other hospitals, so that eventually a sound base will be available to compare present trends with those of the past.

Our material, extracted from the statistical entries on the cards for every first admission of schizophrenia from 1913 through 1952, represents a total of 4,254 cases. This number is not only large, but since it includes every schizophrenic first admission over a 40-year period, it is not subject to the errors one might fear in a sample study. There is additional validity in the use of the Warren State Hospital which has functioned actively for 75 years and is the only public mental hospital in northwestern Pennsylvania. During the 40 years under study there was a notable continuity of supervision: Dr. Harry Mitchell, former president of The American Psychiatric Association, was superintendent from 1912 to 1933. One of the authors has been superintendent since 1935 and has been associated with the hospital since 1926.

[1] Read at the 111th annual meeting of The American Psychiatric Association, Atlantic City, N. J., May 9-12, 1955.

[2] From Warren State Hospital, Warren, Pa.

All legally committed patients are accepted without a waiting list, without any restrictions as to age, severity of symptoms, or financial condition. This means that our figures on discharge are less favorable than if we were limiting admissions to those schizophrenics with good prognosis. In accepting all legally committed patients we must take those with long histories of fixed symptoms and earlier periods of private or public hospital care. The prognosis in such instances is obviously poor and has an unfavorable influence on our over-all statistics. There is good reason, therefore, to believe that the total schizophrenic admissions reported here are representative of such patients as admitted to a state hospital.

This paper reports only on the rates at which consecutive first admissions of schizophrenia have been discharged and at which those discharged patients have been readmitted. As a 10-year follow-up period was decided upon, we shall report on the rates at which discharges occurred during the first 10 years after admission in each individual case; and, similarly, show the rates of readmission during the 10-year period following discharge. This is a conservative period—twice the duration of the usual 5-year follow-up accepted in studies of most diseases.

Of all 4,254 admissions of schizophrenia during the 40-year period, exactly 2,726 (64.1%) had been discharged as of January 1, 1955. Table 1 shows the cases divided into chronological periods of admission.

The table indicates that for this hospital, at least, the rate of discharge among schizophrenics was always higher than most textbooks would lead one to expect. Throughout the 20-year period ending in 1932 there was a consistent figure of 54%. The first change is with the 1933-42 admissions, when the 10-year discharge figure rose to 61.2% of all admissions. Ten years have not yet gone by for the 1943-52 admissions, but even at this premature date 72.5% of the latter admissions have already been discharged.

TABLE 1

10-YEAR DISCHARGE RATES OF FIRST ADMISSIONS OF SCHIZOPHRENIA, BY PERIOD OF ADMISSION, WARREN STATE HOSPITAL, 1913-52, INCLUSIVE

Period of admission	Total first admissions	Total discharges by end of 10 years after admission in each case %
1913-22.....	630	346 (54.9)
1923-32.....	575	313 (54.4)
1933-42.....	1,265	774 (61.2)
1943-52.....	1,784	1,293 (72.5)*
Totals.....	4,254	2,726 (64.1%)*

* It is obvious that 10 years have not gone by for most of the 1943-52 group. The figures given are as of date January 1, 1955.

In every decade during the last 40 years more than half of all schizophrenic admissions were able to leave the hospital. Also there has been marked improvement in the chances of discharge for recent admissions. Now we can tell such patients there are 3 chances in 4 of their discharge.

This report includes schizophrenics of all ages. We shall demonstrate that prognosis is definitely related to age, but first, an all-inclusive statement regarding readmission rates will be useful (Table 2).

There are pitfalls in basing one's thinking on such figures without differentiation as to age groups; however Table 2 serves the useful purpose of showing that of all the discharges from this 40-year period of admissions, only 24% required permanent rehospitalization, (defined as hospitalization which still continued on January 1, 1955). Sixty-percent of all discharges were never readmitted, and an additional 16% were readmitted but able to achieve redischarge and remain out of the hospital. This finding also clashes with the too commonly held belief that most of the schizophrenic patients who do leave the hospital face the prospect of eventual permanent return. Of course, the figures for the most recent discharges in Table 2 cannot be complete because 10 years have not elapsed for many of that group. Based on the figures for the first 3 decades, however, it appears that a figure of some 30% represented the "complete failure" rate for a 10-year follow-up. Current discharges are having a lower rate of first-year readmission than patients discharged in past decades. We can therefore assume that when the 10-year figures for recent discharges are in, the final "complete failure" figure for all the cases we are now discussing will certainly be under 30%. This, we submit, is sound evidence for saying that the old pessimism was

TABLE 2

READMISSION RATES WITHIN 10 YEARS AFTER DISCHARGE, BY DECADE, 1913-52

Period of admission	Total discharges	Number and per cent never readmitted; or readmitted and successfully redischarged %	Number and per cent readmitted for permanent hospitalization† %
1913-22	346	265 (76.6)	81 (23.4)
1923-32	313	189 (60.4)	124 (39.6)
1933-42*	774	555 (71.7)	219 (28.3)
1943-52*	1,293	1,062 (82.1)*	231 (17.9)*
Totals	2,726	2,071 (76.0%)	655 (24.0%)

* 10 years have not elapsed for most of these discharges. Figures given are as of January 1, 1955.
† "Permanent" means still hospitalized as of January 1, 1955, or died in hospital after readmission.

highly erroneous. It thus appears that the chances for discharge have always been fair for schizophrenics—never less than 54% and, for the last decade, approaching 75%. May we also again emphasize that of all schizophrenics who are discharged, the readmission rate for permanent care approximates only 30%.

Tables 3-6 show that the highest discharge rate has always been in the youngest age group—patients under 20—and that the rate declines for each successive age category. Patients under age 20 never had a discharge rate less than 75% and the figure for the most recent decade studied was 84.6%.

Patients aged 20-34 never had a discharge rate lower than 63% and the figure has now risen to 77%. Those aged 35-49 never had a rate lower than 40% and this has now risen to 73.6%. Those over 50 years of age had a pattern of discharge ranging from 20 to 32% in past decades but 50% in 1943-52.

As the tables indicate, the most remarkable change in prognosis occurred in patients aged 35 and older. Those under 35 always had such a high discharge rate that recent

TABLE 3

10-YEAR DISCHARGE RATES FOR ALL CONSECUTIVE ADMISSIONS OF SCHIZOPHRENIA UNDER AGE 20, BY SEX AND BY DECADE OF ADMISSION

Period of admission	Number of admissions			Percentage discharged within 10 years		
	Male	Female	Totals	Male	Female	Totals
1913-22	29	12	41	86.2	66.7	80.5
1923-32	21	17	38	95.2	82.4	89.5
1933-42	61	49	110	82.0	67.3	75.5
1943-52	68	49	117	85.3*	83.7*	84.6*
Totals	179	127	306	85.5%	75.6%	81.4%

* Obviously 10 years have not elapsed for most of the 1943-52 admissions, so figures given are lower than final results will be. Figures shown are status as of January 1, 1955.

TABLE 4

10-YEAR DISCHARGE RATES IN ALL CONSECUTIVE ADMISSIONS OF SCHIZOPHRENIA, AGED 20-34, BY SEX AND DECADE OF ADMISSION

Period of admission	Number of cases			Percentage discharged within 10 years		
	Male	Female	Totals	Male	Female	Totals
1913-22	204	155	359	69.1	54.8	63.0
1923-32	170	146	316	68.2	56.8	63.0
1933-42	389	300	689	63.8	68.3	65.7
1943-52	362	482	844	73.5*	79.0*	76.7*
Totals	1,125	1,083	2,208	68.5%*	69.6%*	69.1%*

* Obviously 10 years have not elapsed for most of the 1943-52 admissions, so figures given are lower than final result will be. Figures shown are status of January 1, 1955.

TABLE 5

10-YEAR DISCHARGE RATES FOR CONSECUTIVE FIRST ADMISSIONS OF SCHIZOPHRENIA, AGED 35-49, BY SEX AND BY DECADE OF ADMISSION

Period of admission	Number of cases			Percentage discharged within 10 years		
	Male	Female	Totals	Male	Female	Totals
1913-22	80	107	187	40.0	41.1	40.6
1923-32	74	103	177	44.6	37.9	40.1
1933-42	161	201	362	60.9	53.2	56.6
1943-52	255	322	577	71.8*	74.8*	73.5*
Totals	570	733	1,303	60.5%	58.8%	59.6%

* Obviously 10 years have not elapsed for most of the 1943-52 admissions, so figures given are lower than final result will be. Figures shown are status of January 1, 1955.

TABLE 6

10-YEAR DISCHARGE RATES FOR CONSECUTIVE FIRST ADMISSIONS OF SCHIZOPHRENIA, AGED 50 AND OVER, BY SEX AND BY ADMISSION DECADE

Period of admission	Number of cases			Percentage discharged within 10 years		
	Male	Female	Totals	Male	Female	Totals
1913-22	17	26	43	35.3	19.2	25.6
1923-32	11	33	44	36.4	15.2	20.5
1933-42	45	59	104	24.4	37.3	31.7
1943-52	106	140	246	46.2*	52.9*	50.0*
Totals	179	258	437	39.1%	41.0%	40.3%

* Obviously 10 years have not elapsed for most of the 1943-52 admissions, so figures given are lower than final result will be. Figures shown are status of January 1, 1955.

improvement appears relatively less spectacular. Those over 35, on the other hand, have seen their rate of discharge almost doubled.

Possibly the resiliency of youth has always given the young schizophrenic a favorable prognosis and modern therapies have not been as necessary for this age group as for the older ones whose outlook has now improved so markedly.

Another astounding change emphasized in the tables is that the rate of discharge has risen much more sharply for females than for males. In the first 2 decades studied, men had a higher discharge rate than women in all age groups. For patients under 35 the rate for males was from 12 to 20% higher. For patients over 50, males, at times, had a discharge rate twice as high as that for women. Beginning in 1933 the discharge rate for women rose and continued to forge ahead so remarkably that for the last cohort studied, the females have had a discharge rate equal to, or slightly higher than, the males in every age group.

One is tempted to speculate that this means a physiological factor is responding to modern somatic therapies, since it has been since the 'thirties that the various shock therapies have been employed at Warren. There is no valid evidence, however, that this would be the sole explanation of the relatively greater improvement in female schizophrenics. One must also consider the factors of changing attitudes toward women in their family, community, industrial, educational, economic, and cultural roles. Also likely is the influence of the great expansion of industrial, occupational, and recreational programs for women at Warren State Hospital since the 1930's whereas male patients had long before been busy with such programs.

Even the schizophrenics aged 50 and over are far from "hopeless" from the viewpoint of hospital discharge (See Table 6). Formerly, we might have assumed that these must be so fixed in a long-standing pattern of illness that very few could ever leave the hospital. The findings of this study give the lie to this old pessimism.

Rates for 1-year Discharges.—The foregoing discussion has to some extent been confusing as we have been speaking in terms of 10-year discharges but 10 years have not yet gone by for most of the 1943-52 admissions,

TABLE 7

DISCHARGE RATES WITHIN ONE YEAR AFTER ADMISSION

Period of admission	Percentage discharged within one year			
	Under age 20	Ages 20-34	Ages 35-49	Ages 50 and over
1913-22	63.4	40.9	21.4	18.6
1923-32	63.2	47.8	24.3	11.4
1933-42	58.2	48.3	37.0	17.3
1943-52	75.2	63.4	59.1	36.2

the group with the most favorable change in prognosis.

Comparing discharge rates for the first 6 months after admission, we find that the rate has risen from 21.9% for the earliest decade to 40.4% for the most recent admissions. The rate for 12 months has risen from 35.1% to 59.0%.

As in the 10-year discharge figures, the rate of improvement in 1-year discharges has been much more favorable for women than for men. In the earliest decade males had a 1-year discharge rate of 39.4% which has now increased to 54.5% for the 1943-52 admissions. The females however, jumped from a 1-year discharge rate of 30.3% to a figure more than twice as high—62.6%.

Table 7 gives the discharge rates during the first year after admission according to age groups. Comparing the figures therein with those in the earlier tables, we see that most of the 10-year discharge figures had actually been accumulated as of one year after admission. In other words, the hospital not only is sending more patients home nowadays but is doing so much sooner after admission. This is true in all age groups, but especially in those aged 35 and over, where the 1-year discharge rate has more than doubled during the period under study.

Readmission Rates.—Critics might logically point out that any hospital could easily increase its discharge rates over the years simply by an arbitrary change of policy resulting in poorly adjusted patients being released. However, there has been no important change in this hospital's discharge policies.

The most objective test of the staff's judgment regarding discharge eligibility lies in the simple question how many patients return to the hospital? If patients were being discharged more prematurely today, their rate of readmission should be higher than in the past. It is, of course, impossible to foretell the number of patients from the current discharges who will eventually return to the hospital. There is a very sound way, nevertheless, to estimate the adjustment of current as compared with former discharges, and that is the rate of readmission within the first year after leaving the hospital.

Both common sense and earlier studies have indicated that the first year after discharge is by far the most difficult for state hospital patients. In this, as in several other of our projects connected with the final outcome of new admissions, we have learned that of all patients who are readmitted to the hospital, the largest single group returns within the first year. The number returning within the second year is seldom more than one-third of the first year figure. The rate for the third and each subsequent year is markedly lower.

If we determine the rate of readmission during the first year after discharge, we should have a fair basis of comparing current discharges with those of the past. This is done in Table 8.

The table refers only to those readmissions

TABLE 8

DISCHARGED SCHIZOPHRENIC PATIENTS WHO WERE READMITTED† TO HOSPITAL DURING FIRST YEAR AFTER DISCHARGE

Period of admission	Total discharges from this group	Number and per cent returned† within first year %
1913-22	346	37 (10.7)
1923-32	313	60 (19.2)
1933-42	774	91 (11.8)
1943-52	1,293	124* (9.6)*

* Not necessarily final, since one full year has not elapsed for 30 of these discharges.

† Readmission figures here refer only to patients still hospitalized as of January 1, 1955, or who died in hospital after readmission.

TABLE 9

PERMANENT* READMISSIONS OF SCHIZOPHRENICS WITHIN 10 YEARS AFTER DISCHARGE, BY SEX AND BY DECADE OF ORIGINAL ADMISSION

Period of first admission	Discharge out of these groups		Percentage readmitted* within 10 years after discharge	
	Male	Female	Male	Female
1913-22	204	142	19.1	29.6
1923-32	172	141	36.6	43.3
1933-42	407	367	24.8	32.2

* "Permanent" defined as still hospitalized as of January 1, 1955, or died in hospital after readmission.

which resulted in "permanent" rehospitalization in the sense the patients were still hospitalized as of January 1, 1955, or had died after readmission. For each of the decades mentioned there was a fairly consistent additional 6 to 7% who required temporary readmission during the first year but again left the hospital and finally succeeded in remaining out. The discharges out of our most recent cohort have had no higher a first-year readmission rate than any earlier discharges. In fact, the 9.6% figure is lower than for earlier periods.

As already mentioned, in the past the total rate of permanent rehospitalization for a 10-year follow-up after discharge was about 30%. On the basis of our 1-year readmission rate for our recent discharges, there is no reason to believe that the eventual 10-year figure for them will be any higher. Current discharges are in at least as good remission as the patients of earlier decades. From a clinical viewpoint they are better prepared to face community living than were the patients of the past.

First-year readmissions resulting in permanent rehospitalization show no great difference between males and females, but the 10-year figures for the period prior to 1943 show that females had a higher rate (Table 9). In the past women had a higher permanent rehospitalization rate than men. It will be interesting to observe with the passage of time whether this continues to be true. We have already found that the 1943-52 female admissions have reversed the old pattern and exceeded the male discharge rate for the first time in 40 years.

Table 10 gives an analysis of first year readmission rates by age groups. It shows that the schizophrenics over age 50 always had the highest rate of readmission in the decades prior to 1943. Since then the difference appears to have been wiped out, so that the discharged patient today has about the same probability of first-year readmission for permanent care whether he is aged 20, 30, or 50.

SUMMARY AND CONCLUSIONS

1. Without exception, each age group has achieved a rising rate of discharge over the 40-year period studied. The most marked rise has been in patients aged 35-49, where the rate has risen from 40% to 74%, and in patients aged 50 and over, where the rate has jumped from 25% to 50%.

2. In the 20 years prior to 1933, males traditionally had a higher rate of discharge than women. Beginning in 1933 the gap gradually closed until 1943-53's admissions saw a com-

TABLE 10

SCHIZOPHRENIC PATIENTS, BY AGE GROUP AND DECADE OF FIRST ADMISSION PERMANENT* READMISSION OF PATIENTS WITHIN FIRST YEAR AFTER DISCHARGE—

Period of first admission	Per cent readmitted during first year after discharge			
	Under age 20	Ages 20-34	Ages 35-49	Age 50 and over
1913-22	9.1	11.5	7.9	18.2
1923-32	20.6	20.1	15.5	22.2
1933-42	12.6	12.1	8.8	24.2
1943-52	8.1	9.1	10.4	10.6

* "Permanent" in sense that patients were still hospitalized as of January 1, 1955, or died in hospital after readmission.

plete reversal of the pattern, with women having a higher rate of discharge than men.

3. The readmission rates cannot be fully compared until more time has gone by for recent discharges. However, a figure of some 30% represents the rehospitalization rate during 10 years after discharge for earlier cases. Since the 1943-52 discharges have a first-year readmission rate of 9.6%, there is sound basis for believing that recent discharges are achieving as good or better remissions than patients discharged in former years, and that the final 10-year permanent readmission figure will be 25 to 30%.

4. Studies of this type provide a historical perspective of changes which have taken place in prognosis for the schizophrenic. Such data also provide a useful yardstick for evaluating new therapeutic techniques.

This study, along with others completed and in process at the Warren State Hospital, demonstrates that the old pessimism about schizophrenia is not justified. Three of 4 schizophrenics currently coming to the hospital are being discharged and only 25-30% of currently discharged patients will require permanent readmission.

These studies also seem to contradict the oft-expressed views that shock and other modern therapies have not really effected any change in prognosis for the schizophrenic patient. The figures demonstrate quite clearly a sharply improved outlook. There is no longer any reason for the family physician or the psychiatrist to talk in hopeless terms with the family of the schizophrenic patient. There is every reason to believe that new therapies and improvement of presently available therapies will brighten the already encouraging picture.

IS IT SAFE TO WITHDRAW SEDATIVE DRUGS?

MAX LEVIN, M.D., New York City

Alarming symptoms may follow the abrupt stoppage of a sedative drug, and physicians have long wondered about the safety of withdrawing such a drug. This paper considers the pros and cons of this question. The narcotic drugs will not be considered.

As regards the barbiturates, the evidence is clear. Isbell(1), Fraser(2), and their associates have shown that the abrupt withdrawal of barbiturates, when they have been taken to excess, may be followed by convulsions and delirium in a few days. Thanks to their careful studies it is now clear that the abrupt withdrawal of barbiturates is dangerous.

As regards other drugs, there is no such clear and decisive evidence. I am concerned mainly with the bromides and alcohol, and will try to show that the opinion of many physicians, that it is unsafe to withdraw these drugs, is premature and is based on misinterpretation of clinical evidence. The misleading evidence is of 2 kinds.

1. There are cases in which the patient, when loaded up with bromide or alcohol, is admitted to a hospital and a day or two later becomes acutely delirious. The seemingly obvious conclusion, that withdrawal of the drug provoked the delirium, is not obvious at all, for it is open to criticism on 2 counts.

In the first place, there is reason to believe that when a man is on the verge of delirium, the transfer from home to hospital may impose enough burden on his already overburdened brain to cause his mind to snap(3). This statement may shock the reader, for admission to hospital is intended to help a man, which it usually does. But one of delirium's cardinal signs is disorientation: the patient is confused and can't keep track of his surroundings. When a man is not yet delirious, but only on the verge of delirium, he has not yet lost his faculty for orientation, but his hold on it is slippery indeed. When at this critical moment he is taken away from his familiar surroundings and put into hospital, his cerebral function may collapse under the new burden of adapting to a strange and difficult-to-grasp environment.

In asking "What's so hard about adapting to a new setting like a hospital?" one falls into the healthy man's error of taking things for granted. Every mental task, however easy, is taxing to a man on the verge of delirium. The healthy man may not realize this, for he does many things automatically and seemingly without effort. When he gets on a train in New York and wakes up next morning in Chicago, the realization that he is now in Chicago seems to require no effort. But the loss of orientation in delirium shows that this function is vulnerable. A man on the verge of delirium who becomes delirious on admission to hospital may be compared with a man in the preparalytic stage of poliomyelitis. A healthy man will think nothing of walking a quarter of a mile, but this amount of exertion by a candidate for paralysis may suffice to tip the beam against him and cause the inflamed spinal cord centers to succumb.

In the second place, the delirium of the recently admitted patient may have been precipitated by factors in his general physical condition(4). This applies especially to alcoholic delirium, which is due not alone to too much alcohol but to exhaustion as well, coupled with malnutrition and dehydration. When delirium tremens is imminent, the history usually shows that the patient has been going downhill physically. Because of gastritis he has been eating less and less, vomiting what little he does eat. He even can't hold liquids down and is now thin and dehydrated. Moreover, owing to nervousness and restlessness he has been sleeping poorly. In the classical case of delirium tremens one often learns that prior to the onset of delirium the patient has not slept a wink for days. When delirium tremens is imminent, therefore, it is not enough to stop the alcohol. One must combat exhaustion by forcing fluids and providing sleep and nourishment.

There are localities where, because of inadequate facilities, patients on the verge of delirium tremens are locked in jail pending commitment to a mental hospital, a procedure that might take several days. I have seen

such cases and have been appalled to learn that the patient was treated like any other jail inmate. Nothing was done to combat dehydration and insomnia. He was given the standard diet, which often consisted of fried greasy indigestible food that might turn the stomach of a healthy man, let alone one on the verge of delirium tremens. When such a man becomes delirious after having languished several days without food or sleep and with a parched tongue, how can one blame the delirium on the fact that the jail took away his alcohol?

2. A second type of fallacious evidence consists of those cases in which the patient is already delirious on admission and seems to grow worse a few days later. Thus a man with severe bromide intoxication enters the hospital in a "low muttering delirium" and bromides are stopped. He lies in bed stuporous. On the third day the nurse is startled to find a terrified man, raving mad, fleeing down the hall in his gown, upsetting the medicine tray, and making for the window to escape from imaginary enemies. He seems to have taken a turn for the worse and the resident physician shakes his head and regrets that he stopped the bromides so suddenly. But nothing could be more fallacious. The man is not worse at all; he is better!

To understand this matter we must bear in mind, with Hughlings Jackson, that the nervous system is made up of a series of levels. The lowest levels are the most highly organized, that is, they are the most stable, the most resistant to poison. The highest levels are the most unstable, the most easily exhausted, the most vulnerable to poison. If the reverse were the case, death from a few drinks of whiskey would be a common thing.

When the brain is recovering from exhaustion or poison, the lower levels, being tougher and more stable, recover sooner than the higher levels. Post-epileptic furor is a good example. Right after an epileptic fit the patient lies in deep coma, with paralysis of all levels of the nervous system except the very lowest. As he begins to come to, he may pass through a stage of furor, with wild unrestrained excitement. This is because the lower levels have recovered and have regained their functional capacity, while higher levels are still paralysed. Since it is the job of higher levels to hold lower ones in check, lower levels now run wild, like boys in a classroom when the teacher is out. To the policeman the man in furor is "worse" than the comatose man who lies peacefully on the floor. But to the physician the man in furor is better, since there is partial restitution of function.

Similarly, the man in bromide delirium who gets excited on the third day is now better, not worse. On admission he was stuporous, close to death, the poison having affected the nervous system far down in the scale of levels. With discontinuance of the drug, the lower levels having recovered while higher levels are still *hors de combat,* the patient is excited and disturbed(5).

For these reasons I submit that we should regard as unproved the theory that the abrupt withdrawal of bromides and alcohol is harmful. The opposite is true of the barbiturates.

BIBLIOGRAPHY

1. Isbell, H., and Fraser, H. F. J. Pharm. & Exper. Therapeutics, **99**: 355, Aug. 1950.

2. Fraser, H. F., Isbell, H., Eisenman, A. J., Wikler, A., and Pescor, F. T. AMA Arch. Neurol. & Psychiat., **94**: 34, July 1954.

3. Levin, M. J. Nerv. Ment. Dis., **116**: 210, Sept. 1952.

4. Levin, M. Am. J. Psychiat., **107**: 689, Mar. 1951.

5. Levin, M. Am. J. Psychiat., **95**: 697, 1938.

SIMULTANEOUS OCCURRENCE OF SCHIZOPHRENIA IN IDENTICAL TWINS

REBECCA SOLOMON, M.D., AND EUGENE L. BLISS, M.D.
NEW HAVEN, CONN.[1]

The psychological similarity of identical twins was noted by Galton(1). Dahlberg(2) studied normal twins and suggested that studies of the life histories of twins might delineate the relative importance of environmental and hereditary factors in human development. He argued that if the incidence of a disease is significantly higher in identical twins than fraternal twins or siblings, it may be assumed that genetic factors are etiological.

A variety of psychological studies have been made on twins. These include investigations of Merriman(3), Lauterbach(4), Wingfield(5), Newman(6), etc. Psychiatric case studies of identical twins have been reported by Burlingham(7, 8), and Petö(9), who emphasize, not only the psychological alikeness of these subjects, but also important emotional differences. These differences include the development of dissimilar symptoms in response to similar intrapsychic conflicts; the likelihood of one member of the twinship assuming the dominant role early in life; and the tendency of mothers to treat the twins as if they were not the same.

The technique of twin study has been applied in particular to the problem of schizophrenia by Luxenberger(10), Rosanoff (11), Essen-Möller(12), Kallmann(13), and Slater(14).

Kallmann(15) has recently summarized these data. From his own extensive and painstaking studies of families of schizophrenic twins he has concluded that the probability of becoming schizophrenic increases in direct proportion to closeness of blood relationship to the schizophrenic member. The incidence of schizophrenia in the general population is less than 1%. The rate in parents of a schizophrenic twin is 9.2%, in a full sibling 14%, in a fraternal twin 14%, and an identical twin 86%. A similarly high concordance rate for schizophrenia in identical twins has been found by other investigators(15), although their figures are slightly lower than Kallmann's (66-76%).

Both Kallmann and Slater(16), have emphasized their conviction that these data although indicating a genetic factor in the pathogenesis of schizophrenia, also demonstrate the crucial importance of environmental influences. Approximately 20% of the identical twins whose co-twin has the disorder do not become schizophrenic. When twins are separated early in life the concordance rate for schizophrenia drops. It is usually the submissive twin who becomes more seriously ill. Furthermore, when only one co-twin becomes schizophrenic, the psychotic member usually has had the more unfavorable life experiences.

Recently we have had the opportunity to study briefly a set of identical twins whose acute schizophrenic psychoses erupted almost simultaneously. Personality differences had been noted throughout their lives and a symbiotic relationship appeared to play a crucial role in the coincident onset of their psychoses. The identity of their twinship was established by physical examination and serological tests. They were remarkably alike in appearance. Both were 5 feet 5 inches tall, had light brown hair, and gray irises. Each belonged to blood group B and were Rh negative.

CASE REPORTS

"A", aged 34, was admitted to the West Haven V.A. Hospital, diagnosis schizophrenic reaction, in November 1953, because of insomnia, depression, withdrawal, and confusion. Symptoms began 5 months before admission shortly after the patient became involved in a love affair with the wife of a friend. Psychological disturbances increased gradually and reached a peak 3 weeks prior to hospitalization when he was demoted at work.

A month later, in December 1953, his identical twin "B" was admitted to the hospital with the diagnosis of an acute schizophrenic reaction. He complained of nervousness, fearfulness, and an inability to think clearly which had been present for 3 weeks. He seemed overwhelmed by the illness of his sibling.

[1] From the West Haven Veterans Administration Hospital and Department of Psychiatry, Yale University School of Medicine.

The twins were the oldest in a family of 11 children. Several of the siblings were considered "nervous," but none except the identical twins had been psychotic. Other siblings reported that A was the mother's favored child, although she disclaimed favoritism. All members of the household had apparently looked up to A for leadership. It was he who had supported the family, as the father, aged 61, was a poor provider. The father had a long history of alcoholism, severe temper outbursts, and was reported to have been very jealous of his wife. About 10 years ago, he entered a psychiatric hospital. Diagnosis at that time was involutional psychosis, paranoid type, but the physicians at that hospital, who recently reviewed his record, suggested that a more appropriate diagnosis would be schizophrenic reaction, paranoid type. The mother, now 56, has heart trouble. She was described as a good person who tried in this difficult situation to give every possible assistance to her children.

A and his identical twin were always inseparable, although A has been the dominant and more successful of the two. A did well in school, but left in the second year of high school to help support the family. His first jobs were simple ones, but he steadily improved his situation and for the last 14 years worked in the same factory where his advancement continued until he was demoted recently. He served in the navy for 28 months, saw no combat, and functioned well in his capacity as pharmacist's mate.

A and his twin were both known to have had many homosexual experiences, but it is not known whether they had any with each other. The twins had several male friends with whom they went fishing and hunting. The family realized and accepted the fact that the main purpose of these trips was to enjoy homosexual relationships. A had only a few heterosexual contacts, and one of the precipitating factors in the present illness was his impotence in the current clandestine relationship with the wife of a friend.

During hospitalization at West Haven V.A. Hospital A was very agitated. He had trouble eating and sleeping, and found it difficult to talk. When he did speak, he expressed feelings of hopelessness, helplessness, and worthlessness. He believed he had failed as a man, both in his job and his love affair. He thought he was losing his mind. At times it appeared that he was hallucinating, though he never verbalized this. He had many physical complaints and was greatly concerned about his health, but spoke of his body in a detached fashion. After a suicidal attempt he was transferred to the state hospital, since closed ward facilities were not available in the V.A. Hospital at that time. Both at this hospital and at the state hospital a diagnosis of schizophrenic reaction was made. This was confirmed by psychological tests. He responded to electroshock therapy and was discharged in June 1954.

Two days after his brother was transferred to the state hospital, B was admitted to the West Haven V.A. Hospital. The patient stated that for as long as he could remember, he had not felt right. He had always been depressed and felt that life was no good. He attributed these feelings to unhappiness at home and the tension between his parents. He blamed his father for these difficulties, indicting his father's alcoholism, inability to support the family, and the excessive sexual demands he made on the mother. B remembered acrimonious arguments between his parents, when his mother objected to the father's sexual advances. At the age of 14, he had "funny feelings" which were very disturbing. He thought he was going to die. He saw doctors who told him he had no physical disability. Other members of the family referred to B's condition at that time as a "nervous breakdown." B continued to be very concerned about his health, and remained tense. At about 16, he began to drink excessively to relieve tension. Like his brother, he left high school after 2 years, but unlike his brother he was not a good student. He worked more sporadically than his brother and had jobs which required less skill than those his brother held. In 1941 he was inducted into the army. He was overseas for about 1½ years, and participated in rear guard actions. When a buddy was wounded, he became agitated and was hospitalized. B refused to leave his buddy because they had agreed that should one be hurt, the other would remain with him. After 2 weeks hospitalization, he returned to duty and was discharged in 1945, but did not work for 7 months. Since that time, he has held several jobs and has been absent from work frequently because of tension and alcoholism.

He always found it difficult to get along with people and most of his social contacts were made in company of the twin brother. Homosexual practices began at an early age and persisted. He expressed guilt about these experiences. In the past, he dated women occasionally but recently had had no interest in them. He never thought of marriage because "I'm not good enough."

About 3 weeks prior to hospitalization, he began to "feel horrible." He could not think or concentrate because "many things come into my mind." He worried about his family and his health. He feared death and yet thought of suicide. He thought he might be going mad. Although he stated that he did not know whether his illness was precipitated by his job which was oily and dirty or by the illness of his brother, it was quite clear that the latter factor was of prime importance. He was bewildered by his brother's illness. His comment about it was "he was always better than me." The implication that he could not remain well if his brother were sick was apparent.

During hospitalization at the V.A. Hospital, he was restless and agitated. He ate and slept poorly. He pleaded for help and expressed great fear that something horrible was about to happen to him. He complained of an awful smell which heralded some disaster. He was unable to participate in the activities of an open ward and required facilities other than those available at the time. When the decision to transfer him to the state hospital was made known to him, he expressed gratitude and inquired whether he would be with his brother. A diagnosis

of schizophrenic reaction was made both at this hospital and the state hospital and was confirmed by psychological tests. After transfer, he received electroshock therapy, improved, and was discharged. It was reported that the twins were very pleased when they met in the hospital, and were inseparable while there. It was noted that although both were passive and ingratiating with other patients, A was the more dominant in relation to his sibling.

DISCUSSION

Several points of interest emerge from the story of these twins. Their early lives were chaotic. Their father was apparently schizophrenic. Both were overt homosexuals. In this connection, Kallmann(16, 17) has reported 100% concordance for male overt homosexuality in a series of 44 one-egg twins. Throughout their lives, the twins had a very close relationship in which A was dominant. In the army, B had a relationship with a buddy similar to that which he had with his twin and became disturbed when his alter ego was injured and separated from him. In many ways this was the prototype for what happened later when his real brother became ill. It is not surprising that B's breakdown should so rapidly follow A's, since B's dependency on his stronger sibling was so intense. B apparently relied on A to maintain the integrity of his personality and when A became psychotic, he felt that something horrible had happened to himself. Electroshock treatment, coupled with the reunion of the twins in the state hospital, benefited both.

It is interesting to note the degree of similarity which characterized the two. Both patients had acute psychotic episodes with comparable symptomatology. Both responded rapidly to electroshock therapy and were discharged after a short hospitalization. On psychological tests their scores were similar on those subtests of the Wechsler-Bellevue Test (vocabulary and information) which tend to remain most stable. Each had a history of overt homosexuality.

Dissimilarities were evident in their work and social adjustment. A was more dominant, responsible, and successful. He was more outgoing and, prior to his psychosis, gave the appearance of greater stability and less inner turmoil. Psychological tests reflected these differences. A scored higher on the majority of the subtests of the Wechsler-Bellevue Test. On the Rorschach Test he appeared to have greater ego strength, better reality testing, and less severe sexual conflicts.

Although little about the ultimate etiology of schizophrenia can be concluded from these observations, they do suggest, even in the face of indisputable genetic predispositions, that life experiences and interpersonal relationships play an important role in precipitating a schizophrenic episode.[2]

If one were aware only that a pair of identical twins developed schizophrenic reactions simultaneously, it might be tempting to conclude that the episodes were entirely genetically determined. Yet it seems clear that this was not the case. Rather it was B's inextricable emotional involvement with his brother and dependence upon him that determined the timing of his psychotic episode. When his more capable and successful brother, upon whom he relied, became ill, B was unable to sustain himself, and he, too, became schizophrenic.

SUMMARY

A study of identical twins who developed schizophrenic reactions simultaneously is presented. The vulnerability of the twins to schizophrenia is not explained by the data, but it is suggested that the symbiotic relationship existing between the two, was responsible for the coincidence of the two psychotic processes.

BIBLIOGRAPHY

1. Galton, F. Inquiries into Human Faculty. New York: MacMillan, 1883.

2. Dahlberg, G. Twin births and twins from a hereditary point of view. Stockholm, 1926. Referred to *in* B. M. J., **2**: 548, 1953.

3. Merriman, C. The Intellectual Resemblance of Twins. Psycholog. Monographs, Vol. 33. Psychological Review Co., 1924.

4. Lauterbach, C. E. Genetics, **10**: 525, 1925.

5. Wingfield, A. H. Twins and Orphans: The Inheritance of Intelligence. London & Toronto: J. M. Dent, 1928.

6. Newman, H. H., Freeman, F. N., and Holzinger, K. J. Twins: A Study of Heredity and En-

[2] A similar set of schizophrenic identical twins is being studied by Lidz(18) who has extensive psychological data not only about the twins but also the members of the immediate family.

vironment. Chicago: University of Chicago Press, 1937.

7. Burlingham, D. Psychoanal. Study of Child, **2**: 61, 1946.

8. Burlingham, D. Psychoanal. Study of Child, **3-4**: 57, 1949.

9. Petö, E. Internat. J. Psychoanal., **27**: 126, 1946.

10. Luxenberger, H. Z. ges Neurol. Psychiat., **56**: 145, 1930. Quoted by Kallmann, F. J.(15).

11. Rosanoff, A. J., Handy, L. M., Plesset, I. R. Am. J. Psychiat., **91**: 725, 1934.

12. Essen-Möller. Psychiatrische untersuchungen an einer serie von zwillingen. Copenhagen: E. Munksgaard, 1941. Quoted by Kallmann, F. J.(15).

13. Kallmann, F. J. Am. J. Psychiat., **103**: 309, 1946.

14. Slater, E. Psychotic and Neurotic Illnesses in Twins. Med. Research Council, Special Report Series, No. 278, London, 1953.

15. Kallmann, E. J. Heredity in Health and Mental Disorder. New York: Norton, 1953.

16. Kallmann, F. J. Am. J. Human Genet., **4**: 136, 1952.

17. Kallmann, F. J. J. Nerv. Ment. Dis., **115**: 283, 1952.

18. Lidz, T. Personal communication.

ACKNOWLEDGMENT

The authors are grateful to Jane Oltman, M. D., of the Fairfield State Hospital, Connecticut, for her cooperation and kindness in making available to us data on these patients.

THE HYSTEROID ASPECTS OF HYPNOSIS

AINSLIE MEARES, M.B., B.S., B.Agr.Sc., D.P.M., Melbourne, Australia

Hysteria and hypnosis have long shared a close association. Not only has there been the general belief that hysterics were the most suitable patients for treatment by hypnosis, but some authorities in the past have been so impressed with the similarity of certain hysteric and hypnotic phenomena as to draw the conclusion that the two conditions had a similar origin. Both hysteric and hypnotized patients show a marked tendency to act, to act a part, to speak by their actions. There is also the similarity between hysteric fugue states and some ambulatory trance states. A lability of affect and a tendency to abreaction is common to both. Influenced by these factors, Charcot believed that the two conditions were practically synonymous, and he postulated that hypnosis was a form of hysteria which could be induced in certain constitutionally predisposed subjects. Later, it was Janet's work on hysteria that led him to apply the idea of dissociation to hypnosis as well as hysteria.

It is interesting to note that the tendency to act has often led the hysteric to be accused of simulation or malingering. The same tendency for the hypnotized subject to act has prompted countless observers to regard the matter as fraud.

In ordinary clinical practice, these features are shown not only in the hysteroid manner in which the hypnotized patient fulfills many suggestions, but also in the hysteroid character of much of the apparently spontaneous behavior. The hypnotized patient accepts suggestions; but in certain very limited fields, and under certain circumstances, the waking subject also accepts suggestions. We are using suggestion in the technical sense implying the uncritical acceptance of an idea. There are obvious differences in the process of suggestion in the hypnotized and the waking subject. In the deeply hypnotized state, almost all suggestions from the therapist are accepted. In the waking state, only very few suggestions are accepted, and they commonly apply only to matters of a trivial nature. This would seem to be an essentially quantitative difference; but there are also qualitative differences. Suggestions that are accepted in the waking state are accepted according to the normal behavior pattern of the individual. From the subject's behavior, the onlooker is unable to tell whether a particular action was in response to suggestion or in response to logical, intellectual activity. The particular act in question is carried out the same way in either case. On the other hand, the behavior of a hypnotized patient in response to suggestion is very different from the normal behavior of the individual. An act performed in response to hypnotic suggestion is carried out in quite a different way from the same act performed in the waking state. The phenomenon requires more explanation than the mere statement that in one instance the subject is in the normal waking state, and in the other in a hypnotic one.

A specific example may make the matter clearer. By an appropriate gesture, the suggestion may be given to the waking subject to pick up a pencil from the consulting room desk. If the suggestion is accepted, the pencil is taken in the same manner as it would be taken if the subject had need of the pencil to write. On the other hand, if it is suggested that a hypnotized subject take the pencil, the action is carried out in an exaggerated manner; in a pantomime, as it were, of the normal act. This hysteroid tendency to act or to dramatize the action is still observed even in very deeply hypnotized subjects. This odd behavior often gives the impression of reduced motor ability; as if it were the loss of motor ability which was causing the inaptitude at carrying out the particular act. But close observation will show that the oddness is really a dramatization of the loss of motor ability than any actual loss. In spite of the blatant and exaggerated clumsiness, the minutiae of behavior are often carried out with a precision which would allow of no real motor impairment. Observations of this nature serve to further emphasize the hysteroid nature of such behavior.

The actions of the hypnotized subject impress the observer by their bizarre quality. There is something unreal about them;

something that does not ring true. There is the impression of acting; but more than this, there is the impression of bad acting; of purposefully bad acting—of burlesque. The hypnotized person carries out the therapist's suggestions, but they are frequently carried out in an exaggerated manner which burlesques the suggested act. The purposeful nature of such behavior must be capable of interpretation in terms of psychological meaning.

There can be no doubt that the intense rapport between subject and hypnotist is a factor in the acceptance of suggestions. But, if the motivation for the fulfillment of a suggestion is the desire to please, why should it be fulfilled in a manner bordering on the burlesque; a manner expressly aimed not to please? If, with Freud, we regard the intensity of the rapport to be analogous to falling in love, and the patient loses his identity in that of the therapist, the phenomenon becomes even more inexplicable. It seems, then, that the suggestion is carried out to please, yet at the same time, it is purposely carried out in such a manner as not to please.

The matter becomes explicable only from the examination of another aspect of the hypnotic state. It was long believed that the hypnotized subject was in the complete control of the hypnotist. The subject was looked upon as having been mastered by the hypnotist, and when hypnosis was deep, the mastery was complete. The subject was considered to be without will of his own, utterly defenseless, in the hands of the hypnotist. Then, first through the work on hypnosis and immoral acts, and more recently through hypnoanalytical studies, it became clear that the hypnotized subject does retain some power to defend himself, but the defenses are subtle and may escape recognition. The subject's unconscious defenses against hypnosis have been described in another paper. It seems that similar mechanisms still continue to operate after the induction of hypnosis.

Viewed in this light, it can be seen that the hysteroid aspects of hypnotic behavior have some meaning. The acting, the pantomime, the burlesque are, in fact, ego defenses. The subject carries out the hypnotic suggestion, but at the same time, he demonstrates his own integrity. "I carry out the suggestion for you, but I will do it a silly way," or, "I will do it, but I do it a way you won't like." At the same time, the hysteroid defense gives expression to the subject's ambivalence to the hypnotist.

Hysteroid mechanisms in hypnosis are manifested in still another way. It seems that there is a strong tendency for the hypnotized subject to act in the way he believes that the hypnotized patient does act. This refers to the individual's basic ideas about hypnosis and not to ideas suggested by the hypnotist. For instance, it was customary for Mesmer's patients to be thrown into a convulsion when they believed they could feel the effect of the animal magnetism, so also with the later mesmerists. It is recorded how Professor Elliotson's famous patient, Elizabeth Okay, would have a convulsion before going into a trance. The relevant point is that the convulsion was not directly suggested by the mesmerist, but it was accepted as general knowledge that the effect of animal magnetism was to produce a convulsion. In other words, the hypnotized, or mesmerized, subject reacted in the way he believed that a hypnotized subject does react. So also, it later became accepted in the public mind that hypnosis was a kind of sleep. Susceptible subjects when asked to fix their gaze on a bright object in the absence of any specific verbal suggestions, would fall asleep instead of having a convulsion. It seems that in these circumstances, the nature of the subject's response to hypnosis is largely determined by his preconceived ideas on the matter.

The same hysteroid tendency can be observed in the consulting room. It so happens that the techniques most commonly used to induce hypnosis never leave the patient wanting as to how it is expected he should behave. For instance, if the patient is being hypnotized by suggestions of relaxation, suggestions of sleep are usually added; the result is that the patient knows what is expected of him, and he goes into an hypnotic sleep. If induction is by arm levitation, the patient likewise knows what kind of behavior is expected of him. He characteristically maintains a fixed gaze on his hands as they lift into the air. Now, the situation is quite dif-

ferent if a subject is hypnotized for the first time without being given any indication as to how he should act. This can be done quite easily by the passive technique which is an elaboration of the suggestions, "You just let yourself go, you let yourself go and it comes all through you." In this case, the subject is given no guide as to how to behave. In actual fact, subjects induced in this manner show a considerable variation in behavior. Some go to sleep; some wander around the room in a trance, as though sleep-walking; some move their arms about vaguely; some remain sitting in an odd attitude. In the absence of any direction as to how to behave, the patient falls back on his own preconceived ideas as to what hypnotized persons do. If the subject associates hypnosis with sleep, he goes to sleep; if he associates hypnosis with the Svengali-Trilby type of phenomena, he exhibits some form of ambulatory activity; if he associates it with doing queer things, he does queer things.

From the foregoing, it seems clear that this type of hysteroid behavior is different from that first described. The latter is explicable by means of suggestion if the term is used in its widest sense. It is easy to see how the two types can merge together when the pattern of behavior is initiated by suggestion, and then subsequently elaborated into a hysteroid defense mechanism. For example, a preconceived idea of loss of motor ability in hypnosis is easily incorporated into a defense against motor activity. Because of the subject's basic ideas on the matter, he will spontaneously show a tendency to behave in an awkward and clumsy manner. But if, for one reason or another, he feels the need to defend himself against the hypnotist's suggestions, then the awkwardness and clumsiness assume a purposive character, and are used as a hysteroid defense against carrying out the suggestions.

From the above considerations, it seems that the hypnotic state is a condition which allows easy use of the hysteric defense. The significance of this may have escaped other observers on account of the general belief that hysterics are the most easily hypnotized subjects, and the tendency in the past for so much hypnotherapy to be confined to hysterics. If working with hysterics, one would expect to encounter a preponderance of hysteric mechanisms. But with the advent of hypnoanalysis, and its application to the psychoneuroses in general, it is found that hysteric mechanisms still predominate in hypnotized subjects. For instance, the obsessive, who in his waking state characteristically uses obsessive mechanisms, in the hypnotized state characteristically uses hysteric ones.

A further conclusion might be drawn. The hysteroid propensities of the hypnotized patient are such an outstanding feature of the hypnotic state that it would seem that, in the past, the hysteric defense has become confused wtih the hypnotic state itself.

Summary

The hypnotized subject still retains some power to defend himself. The explanation of many of the hysteroid aspects of hypnotic behavior is found in terms of ego defense. The hypnotized subject tends to act in a way which he believes a hypnotized person does act. This tendency may be further elaborated into a purposeful hysteric defense.

BIBLIOGRAPHY

1. Meares, Ainslie. Lancet, **2**: 12, 1954.
2. ———. J. Ment. Sc., **100**: 421, 1954.
3. ———. J. Clin. Expt. Hyp., **2**: 4, 1954.
4. ———. Brit. J. Med. Hyp., **5**: 3, 1954.

PSYCHIATRY IN THE FAR EAST

KARL M. BOWMAN, M.D., San Francisco, Calif.

During the past year I obtained a 6-month leave of absence from the University of California, and was sent by the China Medical Board of New York to spend 4 months as visiting professor of psychiatry at the University of the Philippines. I also spent 2 weeks at Djakarta, Java, where the University of California has a teaching project at the medical school, and a week at Bangkok, visiting the University of Thailand Medical School.

The Philippines are now an independent country with a population of about 20 million, of many different races, languages, and dialects. The Philippines, like all the Oriental countries I visited, are fiercely nationalistic. They have now adopted Tagalog, one of the important dialects in the Manila area, as the official language, with the result that many persons are trilingual—Spanish, English, and Tagalog. I was somewhat surprised that the Spanish language has largely disappeared and will probably yield further as Tagalog is extended. One is also struck by the large number of educational institutions in the Philippines, especially in the area around Manila. There is a sudden demand on the part of young persons to secure degrees and white-collar jobs, and actually there are more persons being trained in some types of work than there are jobs available. For example, there is a great excess of graduates in pharmacy, and many young women graduates are unable to secure positions as pharmacists, but are employed by large drug firms in counting pills and wrapping drug packages, hoping eventually to get into actual pharmacy. The reverse, however, is the situation as regards medical graduates. There are probably not more than about 4,000 doctors in the whole country. The result is that attempts are being made by some schools to turn out many times the number of graduates that they can really train adequately.

There is only one psychiatric hospital in all the Philippines. This roughly corresponds to St. Elizabeths Hospital in the United States. It actually is set up for only about 1,200 beds and has over 3,500 patients. There are fewer than a dozen well-trained psychiatrists in the whole country and only one of these is a diplomate in psychiatry of the American Board of Psychiatry and Neurology. I felt somewhat at home, however, because 5 of the psychiatrists there had trained with me in psychiatry at the Boston Psychopathic Hospital years ago. It was interesting on the other hand to find that the Philippine Mental Health Association was a well-developed, vigorous organization, getting out considerable educational material, some of which has even served as a model for other countries. There is also the Philippine Society of Neurology and Psychiatry, which has over 30 members and is set up and functions much like similar societies in the United States. The one small guidance clinic in Manila is run by the Philippine Mental Health Association. This clinic is badly in need of funds, but is doing good work under tremendous difficulties. The Philippine Army has a psychiatric setup and psychiatric wards in the Army hospital, which was formerly a United States Army hospital. The Ministry of Public Health is much interested in the problems of psychiatry and mental hygiene, but has been unable to accomplish much because of lack of funds.

I was fortunate in having one interview with President Magsaysay at the time when Dr. Frank Fremont-Smith, President of the World Federation for Mental Health, and Dr. J. R. Rees, Director of the World Federation for Mental Health, visited the Philippines for a few days. President Magsaysay has made an extraordinary record in restoring order in the Philippines and getting the people of the country back of him. He has been instrumental in turning small plots of land over to the people, a program which is one of the most effective answers to Communism. There is still, however, much unrest in the country and it is not safe to travel at nighttime even in parts less than 35 miles from Manila.

President Magsaysay is well informed on some of the problems of psychiatry and expressed great interest in its development. He

questioned us about the problem of the veterans who run amok. He indicated strong approval of developing a psychiatric ward at the University of the Philippines Hospital. A large and very modern veterans' hospital was near completion, which the United States Government was prepared to finance for the next 5 years. One must keep in mind that during World War II the Philippines were a part of the United States and that all of those who served as soldiers are now veterans of the United States Army, and entitled to compensation and care by the United States Government. Unfortunately, in the building of this veterans' hospital Congress cut the appropriation so that the hospital had to be reduced in size and the result was that the psychiatric wards were eliminated. It will be interesting to see how this problem is dealt with now that the hospital has opened.

Manila is one of the worst-bombed sites in the world. The harbor is still filled with the mass of sunken ships. The feeling of resentment and hatred of the Japanese is extremely strong, and one has only to see and hear the evidence of all sorts of atrocities by the Japanese to understand why this is so. Living costs are extremely high with only 2 exceptions—help is very cheap and taxicabs are likewise very cheap. Otherwise it costs more to live in Manila than in San Francisco or New York.

The University of the Philippines, which is the national university, has an excellent medical school located in Manila. The buildings were badly bombed during the war, but have been reconstructed. The medical school was originally the government medical school and financed by the United States Government. It has profited, therefore, by 50 years of American financing and direction. The school is highly rated and provisionally accepted in the United States as a class A medical school. It is limited to 100 students per class and the curriculum follows the approved plan of the United States medical schools. A large number of the faculty have either graduated from a United States medical school or have had graduate training here. The Philippine General Hospital, which is set up as an integral part of the medical school, has 1,000 beds. Psychiatry has not been developed in proportion to the other departments, and it was for this reason that I was asked to help develop a program for the teaching of psychiatry. The medical school requires a year of internship at the Philippine General Hospital for the awarding of the M. D. degree, following the plan which prevails at a number of our medical schools in this country. Residency training in the various specialties is less well developed.

There are 4 medical schools in Manila and 1 in Cebu. The University of Santa Tomas has an extremely large medical school with classes of 1,000 to 1,200 students. Obviously, adequate teaching cannot be given with the facilities available, but the large classes are justified on the ground that there is such a tremendous shortage of physicians in the Philippines that it is better to turn out this large number of physicians even if they do not receive as good training as would be the case if classes were held down to the size of those at the University of the Philippines. There is a well-organized department of psychiatry; however, with the few qualified teachers and the enormous size of the classes it is obvious that psychiatry is taught largely by didactic methods. The other 3 medical schools are quite small and are attempting to develop teaching in psychiatry.

The Filipinos generally have adopted American clothing, but at formal occasions many of the women continue to wear a special type of evening dress which is a part of their national costume. I cannot describe this accurately, but it is an ordinary low-necked dress with a stiff shawl collar which makes it a unique costume. The universal costume for men is the Barong Tagalog. This is essentially an ordinary shirt with the tails worn outside, but it becomes at times a most elaborate and beautiful shirt with gold or silver threads and other ornamentation. The history of this is of considerable interest. I was told that after the Spanish conquest of the Philippines, the Spaniards wished to make a careful distinction between the Spanish and the Filipinos, particularly when they would be going to church together. They therefore decreed that the Filipinos must wear their shirt tails outside. The Filipinos, who are very clever under oppressive conditions, turned the garment into the elaborate shirt which they now wear. Actually this has

become a form of dress that can be worn anywhere. The most formal occasion is satisfied by wearing this shirt. The difference between the formal and informal dress is that in the latter the top button of the shirt is not buttoned, while with formal dress it is. Also, at a very formal occasion, one would wear black pants and a black belt. Since the Filipinos are always most modest and proper in their dress, and many of these shirts are made of pineapple fiber or other materials that are practically transparent, a heavy undershirt with quarter sleeves is always worn to satisfy the needs of modesty at the expense of cool comfort.

The Filipinos use large amounts of garlic in their food, and one sees in the local newspapers advertisements in which the government requests bids to furnish a certain number of tons of garlic to be purchased under United States aid. I would respectfully suggest that Congress cut this item from its aid to the Philippines.

Food in the Philippines is generally very expensive. Canned foods from the United States will cost 2 or 3 times as much as in the United States. Fresh frozen meat comes mainly from Australia. There are excellent large shrimps, fish, and chicken, but except for rice these are the main locally produced food products. Although night soil is not used as a fertilizer, it is unsafe to eat local vegetables without at least careful washing in Clorox or permanganate solutions.

Alcoholism and narcotic addiction appear to be less of a problem in the Philippines than in the United States. Large quantities of Coca Cola, Pepsi Cola, and 7-Up are consumed and there seems to be much less drinking of alcoholic beverages at both the regular social events and scientific dinners and entertainments. There is apparently some increase in alcoholism among the young soldiers who are being stationed in distant parts of the country and who have little in the way of recreation and are closely confined to their quarters, it being dangerous to wander out alone.

On leaving the Philippines we went to Indonesia. The University of California teaching project at the University of Indonesia Medical School at Djakarta is financed by a federal grant. Ten faculty members of the University of California are continuously assigned to teaching there and members of the faculty of the University at Indonesia are brought to this country for special graduate work. The medical school was much like that of the University of the Philippines, mostly one-story buildings connected by roofed corridors because of the torrential rains. A large hospital, built like our one-story Army hospitals, was an integral part of this teaching setup. At the University of Indonesia the departments of psychiatry, neurology, neurosurgery and psychology are all under one head. The general hospital has wards for psychiatry and neurology, with small compounds so that the patients can get out-of-doors. Neurosurgery, however, was carried out in another building a short distance away from the medical center. On the psychiatric wards electric shock and insulin were being used, and the newer drugs, chlorpromazine and reserpine, were being given a trial. The Indonesian Government is apparently much interested in reserpine, and it is possible that the Government may grow snake root on a commercial basis if this seems warranted. Lobotomy is being done in some cases. Psychotherapy is being carried out to a very limited extent, and the head of the department of psychiatry told me that he felt this was the next thing that they should develop in their teaching program. The teaching of medicine has been completely revised to follow the standard plan of American medical schools instead of that of the Dutch medical schools, which formerly prevailed.

The Indonesians are fiercely nationalistic and are doing everything to get rid of Dutch influence. All textbooks in Dutch are being replaced by English texts. For some time the Indonesians considered translating textbooks into Indonesian. This, however, would have been a tremendous task since many of the scientific terms do not exist in the Indonesian language. English seems to be rapidly becoming the second language of Indonesia and it will probably replace the Dutch language. I was told that it is hoped to eliminate the Dutch language entirely inside of 20 years.

I also had the opportunity of visiting several of the psychiatric hospitals in Java. These likewise are built on the one-story plan,

somewhat like the American Army hospitals. While finances are extremely limited, one was impressed by the kindly attitude prevailing in these hospitals and the genuine desire to improve the care of patients. In one large hospital of over 1,000 beds most of the wards were completely open ones.

Indonesia has a total population of about 70 million and very limited facilities for training doctors and for providing medical and psychiatric care. The people are making very definite progress under difficult conditions.

Our next stop was at Bangkok, Thailand. The people there are very friendly and easygoing. As one of them said to me, "We are the one country in Asia that has never been conquered and under the domination of some foreign country, except for the very brief period during World War II when Japanese occupation occurred. We grow more food than we can eat and Communism will never get a hold with us. We are rather lazy and easygoing, but if we have to we will fight to the bitter end to defend our country." The land around Bangkok is quite flat. There is a large river with many canals so that one can tour about and see the city on small boats. The temples were beautiful beyond description.

The setup of the medical schools in Indonesia is quite similar to that in Thailand and the Philippines. The one school I visited in Bangkok was an impressive two-story stone and concrete set of buildings and there was the usual general hospital as a part of the teaching setup. In addition, there was a small psychiatric hospital as an integral part of the medical center. The teaching of psychiatry has, however, lagged behind the rest of the teaching, and in my talks with the dean of the medical school he stated that he felt the next thing to be undertaken was a revision and improvement in the teaching of psychiatry. I also visited several of the psychiatric hospitals within an area of 15 or 20 miles of Bangkok. These were somewhat similar to the hospitals I had seen in Indonesia.

The Thailanders have a very interesting way of greeting each other. One puts the palms of his hands together in the ordinary attitude of prayer, and nods to the other person. This reminded me of the fact that the Filipinos also had an interesting method of greeting. As a token of respect, the Filipino often takes the hand of the other person and presses it to his forehead. This is often a way that children will greet their parents. However, this custom seems to be falling into disuse.

After leaving Bangkok we came on around the circle, stopping briefly at Beirut, Damascus, Jerusalem, Istanbul, and Rome. Since our time was very limited, I did not check into the medical schools or the teaching of psychiatry in any of these countries and we enjoyed ourselves as ordinary tourists.

LEARNING VERSUS LESIONS AS THE BASIS OF NEUROTIC BEHAVIOR

JOSEPH WOLPE,[1] M.D., B.CH., JOHANNESBURG, SOUTH AFRICA

It has been common to assume that some kind of damage or "distortion" underlies neurotic behavior in both animals(1, 7, 15) and man(5), an assumption that traditionally has its source in 3 features of neurotic behavior—its inappropriateness, its remarkable persistence, and the suddenness with which it sometimes appears. However, in previous contributions(20, 23, 24) I showed, with special reference to experimental neuroses, that all these features are thoroughly consistent with the hypothesis that the central causal process is a simple conditioning (learning) of exceptionally strong anxiety reactions to previously "neutral" stimuli. Experimentally, such conditioning occurs when a spatially restricted animal is subjected to one or other of the following procedures: (1) Repeated exposure to ambivalent stimulation, *i.e.*, stimulation which at one and the same time tends to elicit opposite but approximately equally strong responses(15, pp. 290-291). (2) Application of a large number of weak noxious stimuli in the form of electric shocks(1). A noxious stimulus is defined as one that causes tissue disturbance of a kind that leads or tends to lead to withdrawal behavior(24, p.247). (3) Application of a small number of strong noxious stimuli such as electric shocks(2, 11, 24; 15, pp. 289-290).

In procedures of the second and third type the electric shock stimulus is an obvious source of conditionable anxiety. In the first type a source can be found in the opposing balanced and mutually blocking action tendencies.

The credibility of the learning hypothesis of neurosis formation was enhanced by the realization(20, 23, 24) that there is an apparently insurmountable objection to theories postulating damage of any sort as the cause. Both experimentally(20, 24) and clinically (28, 32) neuroses can be cured by retraining procedures through which given anxiety evoking stimuli lose their ability to evoke the anxiety responses. The stimulus-specificity has been clearly demonstrated by an experiment on cats(20, 23). In these animals neurotic anxiety responses were simultaneously conditioned to visual and auditory stimuli; and after appropriate retraining procedures had detached the responses from the visual stimuli, the auditory cues were found to be as potently anxiety-evoking as before. If learning procedures can overcome neurotic reactions it is scarcely credible that lesions are the basis of these reactions. I originally thought this consideration sufficient to rule out all lesion theories, but it is now apparent that special attention is required by several sophisticated theories(11, 16, 18) which do not mention lesions but in each of which lesions are implied.

A CRITIQUE OF SOME VARIANTS OF THE LESION THEORY

Masserman's Theory of Disruption Due to Motivational Conflict.—Masserman(11) produced neuroses in cats by administering to them, when about to feed in a small cage, high-voltage, low-amperage shocks (and/or airblasts). He concluded that the cause of the neuroses was disruption of behavior resulting from conflict between the feeding motivation and the shock-induced escape motivation.

Masserman has offered no hypothesis regarding the mechanism whereby this disruption has such *persistent* after-effects, but it seems from his statements that follow that some pathological change is envisaged and not just learning.

> Behavior patterns tend to become deviated or fragmented under stress. . . . When in a given milieu, two or more motivations come into conflict in the sense that their accustomed consummatory patterns are partially or wholly incompatible, kinetic tension (anxiety) mounts and behavior becomes hesitant, vacillating, erratic and poorly adaptive (*i.e.* neurotic) or excessively substitutive or symbolic (*i.e.* "psychotic") [12, p. 102].

[1] Part-time lecturer, Department of Psychiatry, University of the Witwatersrand.

When Masserman's attention was drawn (31) to the fact that cats also develop neuroses when they are shocked in a small cage even without relation to feeding, he stated (13) that the term "motivational conflict" applies to

> . . . any disruptive impasse between (a) *any dynamic configuration of accustomed adaptive patterns* (including, in a cat's universe, the opportunity to explore an experimental cage without being rudely electro-shocked) and (b) any new set of experiences that runs counter to such expectations—and is thereby rendered operationally "noxious" or "traumatic."

With a "disruptive impasse," deviation and fragmentation of responses should presumably be clearly evident both immediately after the shock and in the ensuing enduring neurotic behavior. Yet, even in experiments in which an animal is shocked at the moment of taking food the immediate responses are what shock alone might be expected to evoke in a spatially confined animal—such responses as agitation, muscular tenseness, vocalizing, and trying to escape. There is nothing in this that can intelligibly be called deviated and fragmented. At the same time the food-approach behavior is entirely inhibited, and does not appear even in fragmented form. The ensuing neurotic behavior similarly fails to reflect any fragmentation, for it closely resembles the immediate responses to shock, although often at a lower intensity.

But lack of evidence of fragmentation does not entirely exclude the possibility that in some sense the neurotic behavior is caused by a disruption of an "accustomed adaptive pattern." The following considerations, however, seem to contradict that hypothesis directly:

1. If these neuroses were due to the effects of electric shock disrupting the accustomed response patterns of other motivations, the weaker the motive disrupted the less would the neurosis-producing effect of a given shock be (because of less "severity of conflict") [11, p. 121]. From a pilot experiment performed here on one animal, the indication is that if a hungry cat that has been strongly conditioned to make food-seeking responses to the sound of a buzzer is shocked while orientated to the empty food-box (without the buzzer having sounded), it develops a neurosis after as few shocks as are required by animals shocked during approach to food. (The subject of the pilot experiment required 4 shocks, and the mean for the 6 animals shocked during feeding (24) was also exactly 4). Presumably stimuli connected with feeding were acting upon this animal at the time of each shock, but at a motivational intensity considerably lower than if it had been moving forward to seize food in response to the buzzer. This experiment at least suggests that the strength of the motivation upon which the shock intrudes is not a factor in the development of a neurosis. A better experiment, no doubt, would compare the numbers of shocks needed to produce neurosis after different periods of starvation or with different amounts of previous food-training.

2. The following observation also points to the conclusion of the preceding paragraph. My protocols reveal that of animals made neurotic by shock *without* any previous food-training in the apparatus (24), 3 were shocked while still exploring and 3 received their first shock after they had ceased obvious exploring and were sitting or standing quietly in the cage. Such behavior as the shock interrupted in the latter animals presumably had a lower intensity of motivation than that in the exploring animals. Yet both groups appeared to develop neuroses equally easily.

3. Whatever an animal may be doing at the time of the first shock, it subsequently displays some degree of disturbed behavior in the experimental cage, usually with movements towards escape. If further shocks are now administered they result in his responding to the experimental situation with higher degrees of the same kind of disturbance. In other words, all shocks seem to contribute in the same way to the development of neurosis. Yet the later shocks, so far from disrupting an on-going motivation, are, if anything, intensifying an already existing anxiety-*cum*-avoidance motivation.

4. At the United States Air Force School of Aviation Medicine, Warren (19) has recently produced neurotic behavior in rhesus monkeys by giving them 50-100 mild shocks while tied down on a board. Presumably, the animals had an escape motivation even before

the earliest shocks and each shock would only *increase* it.

Solomon and Wynne's Theory of Partial Irreversibility.—Solomon and Wynne(18) believe that to explain the peculiarities of neurotic reactions (intense pain-fear reactions), it is necessary to postulate that their acquisition involves certain distinctive processes. To begin with, they accept Mowrer's view(14) that the learning of emotional reactions in general occurs through a mechanism different from that by which instrumental acts are learned. Then, because neurotic reactions are very resistant to ordinary extinction procedures, they postulate that strongly terrifying experiences in particular produce some change that is permanent and irreversible, such as "a decreased threshold phenomenon or a sensitization phenomenon." This change is distinguished from learning, and thus some kind of lesion is implied.

It has been shown(20, 23, 24) with reference to a neurophysiological model(21, 22, 25, 26, 27, 30), that a single all-embracing learning process such as Hull envisaged(8), easily subsumes the facts for which Solomon and Wynne find it necessary to seek special mechanisms. The difficulty of extinction of high-intensity autonomic fear responses falls into line when the following is taken into account. Extinction depends upon a mechanism related to the production of fatigue-associated substances in effector organs(8, 27). However, the mere cessation of a stimulus conditioned to produce anxiety responses leads to reduction of the anxiety drive. This acts as a reinforcement(8, 22) and counteracts the extinctive activity set in motion by the fatigue products of the effector organs subserving the anxiety responses(20, 23, 24). This implies that each time an animal is removed from exposure to an anxiety-evoking stimulus, the process by which the anxiety responses would be extinguished is nullified. The following experimental finding provides evidence of this(20, 23, p. 615):

If an auditory stimulus to which intense anxiety has been conditioned in a cat is repeatedly presented in a given "neutral" visual environment, the latter acquires the power to evoke anxiety in the animal. The only apparent drive reduction is that which occurs when the ending of the auditory stimulus removes the source of anxiety. If this drive-reduction can condition anxiety to *new* stimuli, then *á fortiori* it can maintain an already existing anxiety conditioning, in this case of the auditory stimulus against the extinctive tendency.

Schaffer's Theory of Relative Functional Decortication.—Basing his case largely on the fact that in certain ways neurotic reactions resemble those of decorticate preparations, Schaffer(16) has proposed that neurotic behavior is due to a "shift in dominance from cortical to sub-cortical centres"(p. 327). He believes this shift to be due to a "pathological state resulting from stress." He rejects the possibility that neurotic behavior can be due to "ordinary" learning, mainly on the strength of objections raised by Maier and his school(10, 4). [These objections are untenable for reasons given elsewhere(29)].

Because the cortex loses its dominance, the responses acquired "are the result of subcortical learning" (pp. 330-1). Thus, although learning of a kind is postulated it has its special features only because of a pathological state resulting from stress. Now, there is indeed probably a subcortical dominance in neurotic behavior, but its occurrence is entirely explicable in terms of "ordinary" learning. The reaction patterns produced by noxious stimulation or conflict are apparently subserved predominantly by subcortical pathways, and when these patterns are evoked in a suitable temporal relationship to a given "neutral" stimulus, that stimulus becomes itself capable of evoking those reaction patterns.

LEARNING AS THE BASIS OF NEUROTIC BEHAVIOR

The word "learning" is used here as previously defined(24, p. 260).

> Learning may be said to have occurred if a response has been evoked in temporal contiguity with a given sensory stimulus and it is subsequently found that the stimulus can evoke the response although it could not have done so before. If the stimulus could have evoked the response before but subsequently evokes it more strongly, then, too, learning may be said to have occurred.

There is reason to believe(22) that the underlying process is the development of con-

ductivity (synapse formation) between neurones in anatomical apposition.

I have contended(24) that all experimental neuroses so far reported have been produced under conditions that conform to the above definition, which is to say that all variants of the 3 basic procedures initially evoke the response constellation that is later seen to be evocable by previously "neutral" stimuli. The same principle appears to apply equally to human neuroses, for whenever, in my experience, a clear history of the onset of neurotic symptoms is obtained, stimuli similar to those evoking the unadaptive anxiety responses were present together with intense anxiety from another source at the time of the onset. For example, a young man had had phobic reactions toward all roughly dressed men ever since an assault by hooligans 8 years previously; a woman of 37 who had an anxiety attack whenever an impulse to defecate arose could clearly date this to an unceremonious and rough rectal examination by a surgeon just before a hysterectomy 3 years previously. The significance of this sort of correlation is not diminished if in these cases, as in many others, still earlier conditioning predisposed the patient to react with exceptionally high anxiety to the "unconditioned" anxiety-producing stimulus (*e.g.*, the rectal examination mentioned above).

Once the neurotic reaction has been acquired, secondary modifications of its character frequently occur, in both animal and human cases—either as a result of repeated exposure to the neurosis-producing conditions, as Kawamura and Yoshii(9) have shown in experiments on rats, or in relation to the repeated evocation of the neurotic responses themselves as observed by Gantt(6) in the course of chronic experiments on dogs. Clinically, too, besides day-to-day fluctuations, lasting alterations which develop suddenly or gradually are frequently found in the patient's neurotic responses to given stimulus situations, as well as "spread" of responses to new stimuli. The mechanisms of such changes will be discussed in a separate paper(34); but it may be stated here that most changes are explicable as learned modifications, the character of which depends upon the particular stimulus, response, and drive-reduction elements that happen to be implicated in or accompany individual evocations of the neurotic responses.

The basic propositions of the present theory of neurosis as learned behavior may be summarized in the form of postulates, as follows:

1. *Neurotic behavior consists of persistent unadaptive learned reactions to given (and sometimes very pervasive) stimuli*(20, 23, 24). Anxiety is almost always very prominent in these reactions, which have their origin in situations which evoke high measures of anxiety in the organism.

2. *The severity of a neurosis depends upon (a) the number of stimuli to which neurotic responses have been conditioned and (b) the strength of the responses evocable by these stimuli.* [This is even true of obsessive and compulsive neuroses, for in most cases the strength of the compulsion is in direct proportion to the strength of certain anxiety responses, and the compulsion disappears upon overcoming the neurotic anxiety conditioning(33)]. It is a corollary of this postulate that fluctuations in neurotic symptoms are a joint function of the extent of neurotic conditioning and the amount of exposure to relevant stimuli.

3. *Psychotherapy is successful according to (a) the number of stimuli whose neurotic responses are weakened and (b) the degree of weakening of the responses.*

4. *Fundamental psychotherapeutic effects depend upon the development of conditioned inhibition of neurotic responses* (cf. 3, 17). This occurs mainly on the basis of reciprocal inhibition(20, 24, 27, 32), though reactive inhibition(8) may well be effective at times. (Removing the stimulus from the patient or changing its character, though often clinically desirable, does not constitute fundamental psychotherapy in the sense of this postulate.) Of 122 cases of neurosis treated by methods designed to procure reciprocal inhibition of neurotic responses, 90% have been either apparently cured or much improved(32).

BIBLIOGRAPHY

1. Anderson, O. D., and Parmenter, R. Psychosom. Med. Monogr. 2, Nos. 3 & 4, 1941.
2. Cook, S. W. Psychosom. Med., 1: 293, 1939.
3. Dollard, J., and Miller, N. E. Personality and Psychotherapy. New York: McGraw-Hill, 1950.

4. Eglash, A. Psychol. Rev., **59**: 376, 1952.
5. Fenichel, O. Psychoanalytic Theory of Neurosis. New York: W. W. Norton, 1945.
6. Gantt, W. H. Ann. N. Y. Acad. Sci., **56**: 184, 1953.
7. Hebb, D. O. Psychosom. Med., **9**: 3, 1947.
8. Hull, C. L. Principles of Behavior. New York: Appleton Century, 1943.
9. Kawamura, Y., and Yoshii, N. Med. J. Osaka Univ., **2**: 133, 1951.
10. Maier, N. R. F. Frustration: The Study of Behavior without a Goal. New York: McGraw-Hill, 1949.
11. Masserman, J. H. Behavior and Neurosis. Chicago: University of Chicago Press, 1943.
12. Masserman, J. H. Principles of Dynamic Psychiatry. Philadelphia: Saunders, 1946.
13. Masserman, J. H. Correspondence. Brit. J. Psychol., **45**: 221, 1954.
14. Mowrer, O. H. Harvard Educ. Rev., **17**: 102, 1947.
15. Pavlov, I. P. Conditioned Reflexes, translated and edited by G. V. Anrep. London: Oxford University Press, 1927.
16. Schaffer, H. R. Psychol. Rev., **61**: 323, 1954.
17. Shoben, E. J. Psychol. Bull., **46**: 366, 1949.
18. Solomon, R. L., and Wynne, L. C. Psychol. Rev., **61**: 353, 1954.
19. Warren, J. M. Personal communication, 1954.
20. Wolpe, J. An approach to the problem of neurosis based on the conditioned response. Dissertation, University of the Witwatersrand, 1948.
21. ———. Psychol. Rev., **56**: 277, 1949.
22. ———. Psychol. Rev., **57**: 19, 1950.
23. ———. S. African M. J., **24**: 613, 1950.
24. ———. Brit. J. Psychol., **43**: 243, 1952.
25. ———. Psychol. Rev., **59**: 8, 1952.
26. ———. Psychol. Rev., **59**: 192, 1952.
27. ———. Psychol. Rev., **59**: 290, 1952.
28. ———. S. African M. J., **26**: 825, 1952.
29. ———. Psychol. Rev., **60**: 111, 1953.
30. ———. Psychol. Rev., **60**: 340, 1953.
31. ———. Correspondence. Brit. J. Psychol., **45**: 220, 1954.
32. ———. Arch. Neurol. Psychiat., **72**: 205, 1954.
33. ———. The conduct of psychotherapy on the reciprocal inhibition principle; illustrated by a case of exhibitionism. To be published.
34. ———. The determinants of change in neurotic symptomatology. In preparation.

RESEARCH ABSTRACTS[1]

CLINICAL NEUROPHYSIOLOGICAL STUDIES OF AFFECT

CHARLES SHAGASS, M. D., MONTREAL, CANADA

There is great need for methods with which to investigate the neurophysiology of affect in the intact human subject. This report presents results obtained with 2 clinical neurophysiological methods which appear promising. In the present studies both procedures were applied to the problem of differentiating anxiety from depression. The general hypothesis was that different affective states are characterized by measurable differences in cerebral excitability.

The first method employs intermittent photic stimulation as a standard stimulus for the EEG. The procedure was developed following the leads of Walter and of Ulett, who demonstrated that variations in mood and anxiety-proneness may be reflected in the EEG response to photic stimulation. A previous study by Shagass showed that there was a significant correlation between affective state and certain quantitative features of the photic driving response. To differentiate anxiety from depression, Shagass found that the most significant quantitative index was the relative amplitude or ratio of photic driving at 15 f.p.s. as compared with 10 f.p.s. The 15 : 10 ratio was high in a group of anxiety states, intermediate in a group of nonpatient control subjects, and low in a group of depressive patients.

This previous study suggested that the photic driving response might fluctuate from day to day in accordance with mood. In the present study this was investigated by testing 2 nonpatient female subjects over a period of some months. One subject received 31 tests, the other 42. The subjects kept a diary to record their feeling state.

One subject was prone to brief depressed moods. The 15 : 10 ratio was nearly always low on days when she mentioned any degree of depression in her diary. This association was statistically significant.

The second subject was almost invariably anxious. It was, however, possible to grade the degree of anxiety from the statements in her diary. There was a significant correlation between degree of anxiety and the 15 : 10 ratio; the greater the anxiety the higher the ratio. These longitudinal studies confirmed the correlations between photic driving response and affective state which were shown in the previous cross-section study.

The second method for studying affect was the procedure developed by the author for determining sedation threshold. The sedation threshold is the amount of sodium amytal required to produce an inflexion point in the amplitude curve of frontal 15 to 30 c.p.s. activity, which occurs in association with slurred speech. In a previous study, Shagass found that the sedation threshold was highly correlated with clinical psychiatric ratings of tension.

The sedation thresholds of 45 nonpatient control subjects, 38 psychotic depressions, 22 neurotic depressions, and 29 anxiety states were compared. Mean thresholds for these 4 groups were, respectively: 3.09, 2.99, 4.64 and 5.38 mgm./Kg. body weight. Thresholds in the nonpatient control and psychotic depression groups were almost identical. There was a high degree of differentiation between neurotic and psychotic depression, with only 5 of 60 cases being incorrectly placed on either side of the median line between 3.5 and 4 mgm./Kg. The sedation threshold in the anxiety states was significantly higher than that of any other group but the degree of overlap with the neurotic depression group was great. Repeat studies of 20 subjects after a median interval of about 30 days (3 to 400 days) yielded a test-retest correlation coefficient of 0.91 and indicated that the sedation threshold was a

[1] The items hereunder are brief abstracts of reports and discussions thereof presented at the Regional Research Conference of The American Psychiatric Association held under the aegis of McGill University, Montreal, Canada, November 5-6, 1954.

stable characteristic of the individual. These results indicate that the sedation threshold differentiates psychotic depressions from neurotic depressions and anxiety states.

The 2 neurophysiological procedures employed in this study appear to be correlated with different aspects of the neurophysiology of affect. The photic driving response appears to be sensitive to day-to-day fluctuations in affect. Furthermore, since a low 15 : 10 ratio was obtained from both, it does not differentiate between neurotic and psychotic depressions. On the other hand, the sedation threshold appears to be relatively stable and differentiates neurotic from psychotic depressions.

The results with these tests support the hypothesis that anxiety and depression are characterized by measurable difference in cerebral excitability. Further development of these and similar procedures should make possible a psychiatrically orientated electroencephalography.

The present EEG tests seem similar to Funkenstein's test of the autonomic nervous system insofar as they differentiate between anxiety and depression. Other data indicate that these similarities are superficial and that the EEG and autonomic tests probably measure different functions. On the other hand, there seems to be a remarkable coincidence between the grouping of psychoneuroses by the sedation threshold and Eysenck's grouping of the neuroses along an "introversion-extraversion" dimension, based on psychological tests. This concordance of results obtained with entirely different approaches suggests that these approaches measure some common basic function. This function seems to be manifested at the personality level along a continuum ranging from the hysterical at one extreme to the obsessional at the other. While admittedly highly speculative, the physiological basis of this personality continuum might possibly be understood in terms of varying patterns of excitation-inhibition mediated through the reticular systems. In such a formulation, psychotic depression would be considered to involve a powerful central inhibitory process.

DISCUSSION

MILTON GREENBLATT, M. D. (Boston, Mass.).—Dr. Shagass's work represents definitive progress in applying EEG-stress tests to the differentiation of emotional states. His ingenious experimental design and approach may well be broadened to include perhaps other emotions besides anxiety and depression. The EEG response to stress has generally been considered as highly nonspecific, and many previous attempts to correlate affective state and cortical tracing have been disappointing. Dr. Shagass has made notable progress in an area heretofore resistant to scientific explorations. The sedation threshold test which he uses to measure the amount of the patient's anxiety is also a worthy contribution in a very important field of study.

In our laboratories at the Boston Psychopathic Hospital, we have carried out elaborate studies in schizophrenic patients to estimate the amount of tension, using psychological, sociological, and physiological tests. A very remarkable difference was noted in outcome after lobotomy; for instance, 84% of patients graded clinically as having "marked" tension improved after lobotomy; and practically none with minimal tension improved after lobotomy. We welcome a new test which gives quantitative and repeatable results in the same person. In medical circles, amytal sedation has in the old days been found useful for the diagnosis and prognosis of patients with hypertension. I am glad to see this idea extended to the psychiatric field.

The EEG has not been as helpful generally in clinical work with the mentally ill as in neurological disorders. Frequently, marked changes in emotional state, e.g., from mania to depression, may occur without any noticeable EEG alteration. The lack of yield using regular EEG methods in obtaining physiological correlates of emotion led us some 5-6 years ago to turn our emphasis from the cortical to peripheral measures of emotional state. Subsequently a polygraph was developed which permits us to record simultaneously several parameters, and, within the last few years, we have turned our attention to an investigation of the psychotherapeutic interview. Perhaps a few words about work going on at B.P.H. might be of interest.

Our work is in some respects a radical departure from previous experimentation of this type, in that we take psychological, sociological, *and* physiological measures on both patient and psychiatrist during the process of psychotherapy. We make no attempt to structure the psychiatrist's work with the patient—only to describe the interaction at various levels and to correlate the physiological changes with shifts in emotional state. This work has produced interesting results; for example, we have been able to show that positive emotional statements by a subject give a higher mean heart rate than negative statements. This relationship holds despite fluctuations in the range of pulse variations from time to time. We have been able to show differences between anxiety, depression, and hostility, both in mean, variance, and lability of heart rate. When one gets down to more subtle

problems, such as transference, it is possible to show that during periods of positive transference a subject has a higher average rate than during negative transference.

By very careful analysis of interviews it is possible to show that heart rate and skin temperature reflect level of anxiety, and that both major and minor psychodynamic shifts may be reflected in changes in physiological measures.

It has been a great pleasure to follow the brilliant work of the McGill laboratories, and I hope this will be one of a long series of mutual exchanges for the benefit of both Canada and the United States.

THE INTERRELATIONSHIP OF ACUTE EMERGENCY REACTIONS DURING STRESS AND AFFECTIVE DISORDER

DANIEL H. FUNKENSTEIN, M.D., BOSTON, MASS.

This report is based on studies carried out at the Boston Psychopathic Hospital on psychotic patients during the past 9 years and on healthy college students during the past 4 years.

Psychotic patients reacted in 7 different ways to an autonomic test devised by us. The 2 most frequently encountered reactions indicated either an excessive secretion of an epinephrine-like substance or an excessive secretion of a nor-epinephrine-like substance. Psychotic patients differentiated on the basis of this autonomic test also differed psychologically and prognostically.

Psychotic patients showing excessive secretion of a nor-epinephrine-like substance were usually angry and paranoid, whereas those showing excessive secretion of an epinephrine-like substance were usually depressed or frightened. If the principal emotional content of the psychosis changed, a concomitant change in the physiology occurred.

Healthy men studied during acute real life stresses most frequently reacted with either excessive secretion of nor-epinephrine-like substances or epinephrine-like substances. In such situations, men who reacted with *anger directed outward* showed evidence of excessive secretion of a nor-epinephrine-like substance; those who reacted with *anger directed inward* (depression) or *anxiety*, evidence of excessive secretion of an epinephrine-like substance. Thus students during acute stress showed the same correlations between emotional responses and physiological reactions as were found in psychotic patients during nonexogenous stressful conditions.

There exists a crucial difference between the emotional responses and the physiological reactions of students during acute stress and those of psychotic patients during nonexogenous stress-producing situations. This is that the psychotic patients had sustained reactions which they were unable to terminate, whereas the students, once the external stimulus was removed, easily terminated their reactions. These findings led to the following hypothesis: The habitual acute emergency reactions of a healthy individual are indicative of the emotional content and autonomic physiology of a psychosis should one develop; but proneness to develop a psychosis is dependent upon the ability to master or failure to master the acute reaction.

In order to test this hypothesis 125 healthy male college students were studied in a series of laboratory stress experiments. In addition, the men each received over 20 hours of study using psychiatric interviews, sociological studies, and psychological tests.

Laboratory stress situations were constructed which produced stress in all subjects. Two aspects of stress reactions were studied: the acute emergency reactions of the men and their ability to handle the stress as time passed. The emotional responses during the acute emergency reactions were predominantly of 3 types: *anger directed outward*, *anger directed inward*, and *anxiety*. The first group showed evidence of excessive secretion of a nor-epinephrine-like substance and the latter 2 groups evidence of excessive secretion of an epinephrine-like substance. The classification of the ability to handle stress as time passed was in terms of mastery or failure of mastery of the stress. Those who mastered the stress showed a decreasing intensity of the physiology as the stressful situations progressed; those who failed to master the stress showed an increasing intensity of the physiology as the stressful situations progressed.

During the acute emergency reactions, the correlations between the emotional responses

and the physiological reactions have their counterpart in the physiology of the early development of the child. At birth, other investigators found that the adrenal medullae contained pure nor-epinephrine with epinephrine being secreted and gradually becoming the dominant secretion as the child developed. *Anger directed outward*, the physiological accompaniment of which was nor-epinephrine, is characteristic developmentally of an earlier psychological level than is *anger directed inward* or *anxiety* (conflicts over hostile impulses), which are accompanied by secretion of epinephrine. Thus the physiological and the psychological development of children seem to run parallel. The same findings emerge if we consider regression. Angry paranoid patients, who show a deeper level of regression than depressed patients, have a physiological pattern (nor-epinephrine) characteristic of an earlier period in life than the physiological pattern shown by depressed patients (epinephrine).

The personality factors which correlated with the acute emergency reactions of the subjects were measures of internal personality. Significant correlations were obtained between the emotion expressed during acute stress and the following personality variables: (1) The perception by the students of the relative importance of one parent in relation to the other as the chief source of authority, identification and affection; (2) their internal concept of self; (3) their fantasies; (4) their social attitudes.

There was no relationship between the acute emergency reactions of the men and the ability to master or failure to master the stress as time passed. No significant difference was found between the number of men who responded originally with either *anger directed outward*, *anger directed inward*, or *anxiety*, and the ability to master stress. For example, the same number of men who initially responded with *anger directed outward* mastered the stress as failed to master the stress. The psychological factors which correlated with the acute emergency reactions failed to correlate with the ability to master the stress.

An entirely different set of personality measures from those which correlated with the acute emergency reactions, correlated with the ability to handle sustained stress. These personality factors were: (1) The ability to assess reality; (2) the types of defenses used; (3) the interpersonal relations; (4) integration of the personality. These personality variables were interpreted as indicating ego functioning.

To sum up, these studies indicated that 2 important aspects of stress reactions, the acute emergency reaction and the ability to master stress were related to different aspects of personality. The correlates of the acute emergency reaction indicated that this is an aspect of personality structure that is laid down early in life. The correlates of the ability to handle stress as time passed were indicators of ego functioning, which was not only a resultant of early childhood factors but of the entire life experiences.

Confirmatory material of the previously stated hypothesis, that the emotional content of a psychosis would be determined by the acute emergency reaction and prowess by the ability to handle stress, was found in 4 men who developed psychoses several years after testing. In all cases, the hypothesis was confirmed. The man whose prepsychotic reaction was *anger directed outward* and failed to master the stress developed a paranoid psychosis; the men whose prepsychotic reactions were *anger directed inward* and failed to master the stress developed depressions. Although this number of cases is small, they are in the predicted direction.

DISCUSSION

R. A. Cleghorn, M. D. (Montreal, Canada).—Cannon's interpretation of the emergency function of epinephrine secretion by the adrenal medulla and of sympathin (nor-epinephrine) by sympathetic nerves was a milestone in medical thinking. It gave a feeling of satisfaction because the reactions of men to stressful stimuli could be expressed in terms of physiological events. Yet there were limitations to this brilliant work which led to these disclosures, and a frustration, for there was not then, nor for 20 years afterward, an appreciation of the psychological significance of the events.

Dr. Funkenstein's studies have contributed heavily to a change in this *status quo* in 2 ways by indicating (1) that the response to stress may be differentiated at the physiological level by the preponderance of either epinephrine or nor-epinephrine as the secretory response; and (2) that the type of physiological response may be correlated to recognizably different emotional reactions. He has indicated furthermore that the psychotic appears to

be under prolonged stress which he is unable to master, in contrast to normals. This led to the formation of a hypothesis, namely, that if epinephrine is the predominant habitual secretory response to acute stress, depression is apt to occur; if psychosis develops, and if nor-epinephrine is the hormone secreted a paranoid state is the corresponding psychotic epiphenomenon if psychosis occurs.

With this hypothesis as a basis Dr. Funkenstein devised the experiments which he has described. The result has been some very interesting data. One of the most significant conceptions which has emerged is the matter of mastery of stress—those who did exhibit mastery showed a subsiding physiological response, and those who did not showed an increase in physiological disturbances.

When a good scientist has data he can make interpretations which have support in something other than intuition or speculation—two pursuits which need not necessarily be derided, though they are better utilized as stimuli for the resourceful than sedation for the stultified. These interpretations of Dr. Funkenstein have a kinetic or longitudinal trend which reaches back into infancy and travels forward with the developing ego. These interpretations are supported by observations having a part in the process of ontogeny to which we are all subject and to regression from which we all hope to be spared.

In other words there seems to be a relationship between the reaction to acute stress and perception of parental figures, self concept, fantasies and social attitudes. If this can be substantiated it is biological data of the first order, combining as it does observation and interpretation in a way that makes sense. The other set of observations which appear to be related to stress, namely those which have to do with mastery appear to be related to personality factors developing at a later stage in life, when integrative and defense patterns are being developed.

CONVULSIVE THERAPY WITH AMPLITUDE MODULATED UNIDIRECTIONAL CURRENTS (REITER)

DAVID J. IMPASTATO, M.D., AND SEYMOUR BERG, M.D.
NEW YORK CITY

A convulsion is a sequence of self-propagated involuntary movements, triggered by a stimulating mechanism. It does not follow the "all-or-none" law, except when the stimuli are supramaximal. A convulsion starting immediately after a stimulus is applied is a suprathreshold convulsion and is caused by supramaximal stimuli. It is always bilateral. A convulsion starting one or more seconds after the stimulus is a threshold convulsion and may or may not be bilateral, depending on the manner of application of the stimulus. Supramaximal convulsions, which are commonly produced by A.C. currents, are of sudden onset, severe, are accompanied by an epileptic cry and a strong flexor spasm, cause frequent confusion and agitation, cumulative memory loss and yield the highest rate of other complications. Threshold convulsions, which are the usual type produced by unidirectional currents are of gradual onset, mild, are not accompanied by an epileptic cry or flexor spasm, and cause much less confusion, agitation, memory changes, or other complications. Modification of a convulsion, especially the clonic phase, can be obtained by continuing the cortical stimulation once the convulsion has been triggered. This reduces the risk of injury during the clonic phase. A second convulsion cannot be produced before the first one ends.

Convulsive threshold varies in different patients and it is necessary, in order to avoid anxiety or confusion, to treat a high threshold patient with a current of high intensity and a low threshold patient with a current of low intensity.

One-sided convulsions can be readily produced by applying both electrodes to one side of the head and raising the current gradually. The patient must be under anesthesia. These convulsions are very brief, cause no apnea or confusion, and are practically free of osseous damage. If the current is raised too quickly a "spill" of the current occurs and the convulsion spreads to the other side.

The following technics are possible with Amplitude Modulated Unidirectional (AMU) currents: (1) *Convulsive Technics:* (a) bitemporal convulsion, (b) bitemporal convulsion combined with nonconvulsive stimulation, (c) unilateral convulsion of focal seizure, (d) unilateral spread convulsion, (e) monopolar convulsion; (2) *Nonconvulsive Technics:* (a) low level nonconvulsive treat-

ment (NCT), (b) high level NCT, (c) abreactive technic, (d) treatment of barbiturate coma, (e) three electrode NCT, (f) modified deep coma treatment, (g) deep coma treatment.

The technics, indications, complications and results of these treatments are described in the paper. In all nonconvulsive technics it is necessary to anesthetize the patient adequately. We have described a simple test which guides us to the proper depth of anesthesia these patients should receive.

Nonconvulsive currents are said to clear up confusion and to stimulate respiration and metabolic activity. We feel that nonconvulsive currents clear confusion by merely causing electric sleep thus allowing the patient to sleep through his period of confusion. The stimulation of respiration is caused mainly by the pain-producing qualities of the current. Pain also causes an increased metabolism which in barbiturate coma helps to eliminate the barbiturate.

With AMU currents, the physician has a number of modalities with which to treat his patients, which allows him to shift from one to the other when necessary. Treatment with AMU currents produces better results and carries a lesser risk of complications than with A.C. currents.

DISCUSSION

R. S. Reiter, D. Sc. (New York City).—I am asked to discuss this paper along technical lines. In the past the questions put to me have usually been concerned with the type of current we use and an implied wish to know why we use it. I shall try to simplify the issues in order to answer these questions.

Many of you have seen the various types of currents on an oscilloscope screen. You will remember that alternating 60-cycle house current oscillates above and below a zero base line 60 times per second. This means that the current originates in the power house and travels at an incredibly high speed to your outlet and back again to the power house 60 times per second. The important point to remember is that the current oscillates back and forth above and below the zero base line so that it alternatively reaches maximum positive and negative values 60 times per second. In direct contrast the unidirectional currents of the Reiter machines are bursts or volleys of pulses in one direction with respect to the zero base line as shown on the oscilloscope screen. In fact, when we reverse the polarity, every bit of the current is seen immediately on the opposite side of the same zero base line.

If we examine the volleys or bursts of current, we find that each volley consists of about a dozen steep-walled bursts. If the current selector is in Position 1, we find that the bursts have a relatively flat top. If the current selector is at Position 5, we find that the bursts very much resemble a thin spike. The intermediate positions have thicker spikes.

The significant aspect of the very fine spikes in Position 5 is that, although they reach into the high values of current, occasionally as high as 1,600 m.a., the time they have occupied is incredibly short, of the order of one-millionth of a second or even less. The micro-second of current by itself would be ineffectual, but when it appears as one of a volley of such spikes it is enabled to excite the brain adequately to produce a seizure.

What is even more interesting is the fact that these spikes need not all be uniformly high but that some may be as low as one-tenth the size of the highest spike, and the average of the peaks in the volley may be approximately one-half of the value of the highest spike. I would like to refer to Dr. Leo Alexander's book, *Treatment of Mental Disorder*, which contains illustrations photographed by the Grass Instrument Company.

Clinically it is found that alternating current (A.C.) will require up to 1,000 m.a. and more to establish a convulsive seizure in the human brain when the electrodes are applied bifrontally. We have found that unidirectional currents (U.C.) are available which provide a convulsive seizure with only 15 to 20 m.a. average. This reduction in current value is not the only significant difference since we are now able to establish the seizure with U.C. so that it is remarkably free of the side-effects of physical thrust, apnea, and confusion. It appears that the U.C. now available is more highly specific biologically than the grosser, more overpowering, unspecific A.C., which is compelled to establish the side effects in order to accomplish the task of creating a convulsive seizure.

It is not easy to establish tenable theories as to why the preceding facts are so. Although the work on nerve physiology has been carried to high levels of knowledge, it is still difficult to establish a theoretical stand which is both plausible and tenable. The simplest explanation I could give would be that U.C. is more effective because it travels in one direction along nerve pathways so that the pulses of the volley reinforce one another in the same direction, that they are sufficiently small in duration to fit in with the normal requirements of the brain, and that the pulses are sufficiently varied in intensity to allow proper and automatic choice at synaptic junctions. If these can be shown to be the necessary requirements, then it is obvious that the rapidly reversing polarity of alternating current sine waves cannot fulfill such standards. We have already pointed out the greater efficiency of the U.C. in providing a seizure, and it remains to prove

the suggested theories for this greater efficiency, or to find better ones.

To help in this direction we are able to point to another fact of value in convulsive treatment as well as of interest from the theoretical standpoint. The remarkably small time consumed by the sharp spiked pulse of Position 5 is an important element in differentiating a convulsive seizure obtained with such a current compared to all other convulsive seizures. Not only is the convulsion unusually soft, but the duration of the seizure is also noticeably reduced in many cases. This raises the question as to how such a specialized form of current is able to select a convulsive area of the brain for maximum effect by leaving those areas of the brain associated with confusion, apnea, and pronounced motor thrust almost free of its exciting effect. Having gone along this pathway of specific currents, with the specific task of creating a seizure, we now know that we can add to the confusion accompanying the seizure by departing from the sharp spikes in the direction of less sharp spikes or worse still, in the direction of alternating current sine waves. It is interesting to speculate on the fact that the sharp spiked U.C. attains high values of current for periods of a millionth of a second in order to create a convulsive seizure while alternating current occupies these peak values of current for much longer periods in order to effectuate a seizure. Is the current like a fast boxer who darts in with rapid lightning-like punches to overcome an opponent, contrasted with the slow, lumbering, heavy boxer who lands one or two hay-makers to overthrow his opponent?

In sharp contrast to the highly convulsive specificity of the current in Position 5, we have the opposite effect of the current in Position 1. This current is useful because it is rather hard to create a convulsive seizure with it. To put it another way, it is harder to get a response to stimulation with the non-spiky pulses of this position. For this reason it is used as a gentle form of stimulatory current. At the present time most of the nonconclusive techniques are based on this particular stimulatory current.

When we give a deep sleep or deep coma treatment, we use the current to provide electrical anesthesia, that is full amnesia, and a deep coma characterized by the patient's inability to respond to the stimuli except by small motor movements when the current is suddenly increased. When the treatment is entirely nonconvulsive, it is possible to start with a small amount of barbiturate anesthesia, but this amount must be kept small if deep coma is to be established quickly with safety. For this purpose large amounts of current are required to provide total amnesia, but these currents must not lead to a seizure. It is therefore better to use the nonconvulsive currents of Position 1, with their relative inefficiency for producing a seizure, for this purpose. As the treatment progresses, depth of coma is established and it becomes desirable to use the higher numbered currents up to Position 5 in order to stimulate deeply and get effective motor responses. If at any point the patient's breathing is markedly impaired, it becomes desirable to reduce the modulation, so that the volleys of current are less closely spaced, and the patient's breathing is forced to become slower and deeper. It is easy to verify that the breathing is more deeply influenced by the current in Position 5 than the current in Position 1, and that has led me to state that the effect of the flat top current tends to be superficial, whereas the effect of the spiky currents tends to be relatively deep in its ability to stir response. We have still one more important variable to control, the placement of the electrodes. During the deep treatment it is often desirable to stimulate over a wide area of the skull. If the coma is already deep it is possible to use the spiky current. If it is not deep, it is often easier to use larger amounts of the non-spiky current to quickly provide depth of coma without leading to a seizure. If the breathing becomes very bad at any time, it is remarkable how easily it is reestablished by retreating to the safe Area One above the eye, using low modulation for slow deep breathing, and spiky current for deepest stimulation. My purpose in making this explanation is to show how very clear are the requirements of the brain under these conditions of treatment, and how logical are the simple controls for the current which we have at hand.

We do not know what these treatments do to the patient as yet. We can only judge by the great clinical changes that occur. For example, a patient who went home on visit after 2 treatments reported back that he had remembered not only the faces, but also the names of people he had known 15-20 years ago. This patient had been brought in in a murderous confused state by 3 policemen. We wonder how this clarification, or increased awareness, takes place following nonconvulsive treatment. I remember a state hospital patient in 1947 who had been mute for 10 years who suddenly began to speak with connected ideas for long periods following a similar treatment. This condition only lasted a few hours and I remember theorizing that it appeared that we had altered the chemical balance to allow connection between different portions of the brain requiring association. I still wonder what the answer is.

PHYSIOLOGICAL STUDY OF PERSONAL INTERACTION

ROBERT B. MALMO, PH.D., MONTREAL, CANADA

The paper opened with an outline of the program of interview studies going forward in the laboratory for psychological studies, Allan Memorial Institute of Psychiatry. The main body of the presentation dealt with the most recent work on dual

physiological recording (from interviewer in addition to interviewee). As far as could be determined, interaction studies of this kind (with electromyographic and other indicators) had not been previously described in the literature; and the present experiments thus represented a pioneering venture. Long-range aims were to gain deeper understanding of transference and related mechanisms of interaction. The immediate purpose of the pilot studies was methodological, of course. Nevertheless, reported were some interesting findings related to dynamic theories of personality.

In association with a supportive attitude on the part of the interviewer, interviewee showed a gradually falling tension during a brief rest pause. When interviewer's attitude was critical, tension did not fall during the rest interval. Very similar results were obtained from the interviewer himself.

Other objective phenomena of interaction were described, and all results were discussed in relation to personality theories.

DEVELOPMENT AND LEARNING IN ANIMALS AND MAN

D. H. SALMAN, PH. D., MONTREAL, CANADA

Primates differ psychologically from infrahuman vertebrates in (1) the smaller amount of innate behavior and the greater importance of learning, (2) the type of learning, (3) the relation between innate biological motivation and the resulting motor behavior, and (4) in the capacity for individual development. Comparative research should therefore use primates as fundamental terms of reference. The basic sensory and motor abilities are similar in the higher apes and man. Their fundamental difference is one of motivation, which determines distinctive types of development.

In primates the integration of behavior is based on a set of innate motivations, their natural interrelations, and the determinations resulting from individual conditioning. The peculiar circumstances of domestication and adoption into human companionship can increase the amount of spontaneous motivation available for non-immediately biological behavior. But development remains limited by lack of intrinsic self-determination.

In the human child, there is an additional central integrating function. Its localization in the hypothalamic region involved in manic elation and depression is suggested, its relations to peripheral pain and pleasure are defined, and its accessibility to specific auditory and visual sign-stimuli (the smiling response) is described. A distinctive intrinsic motivating factor can thus be indefinitely evolved in response to adequate social stimulation. And this universally available source of motivation can explain the differences between human and animal development.

CLINICAL NOTES

THE EFFECTS OF RESERPINE ON SCHIZOPHRENIC PATIENTS[1]

DAVID PEARL, PH. D., HARRY VANDER KAMP, M. D., ALBERT L. OLSEN, M. D., PAUL D. GREENBERG, PH. D., AND STEWART G. ARMITAGE, PH. D.
BATTLE CREEK, MICH.[2]

The widespread use of reserpine and clinical claims of results led to the initiation of this controlled study aimed at investigating the effectiveness of reserpine in the treatment of schizophrenic male patients. One hundred fifty patients, 50 from each of 3 locked wards, were selected as subjects. Of these wards, the first was composed of severely regressed schizophrenic patients with poor reality contact, the second of less regressed chronic patients in fair reality contact, and the last of chronically disturbed schizophrenic patients with poor reality contact. Within each ward, patients were randomly divided so that some received reserpine, others an identical appearing placebo, and the remainder no medication. Reserpine dosages varied from 2 to 10 mg. daily with the majority of patients receiving 4-5 mg. Except for the ward psychiatrist and nurse, no personnel involved were aware of patient's treatment. Persons dispensing the placebo were told it was a variant of reserpine.

All subjects were evaluated prior to medication and again, after 2 months by means of the Lorr "Multidimensional Scale for Rating Psychiatric Patients." Independent ratings based on diagnostic interviews conducted by teams of a psychiatrist and 2 clinical psychologists were secured. Ward behavior was independently rated by ward nurses and charge aides. Analysis disclosed satisfactory agreement by raters in their evaluations. Changes in 11 dimensions of psychopathology characterizing the scales and in scale morbidity scores, which were measures of over-all degree of psychopathology, were analyzed through analyses of variance, covariance, and the chi square procedures.

Results indicated that the most chronically regressed patients showed no significant improvement, whereas the less chronically regressed and the chronically disturbed schizophrenic patients demonstrated a significant reduction in their morbidity scores and improvement in specific areas of psychopathology. These changes with the exception of one category, "withdrawal," were specific for these last 2 groups. Patients of these groups developed a greater interest in their external surroundings, became less taciturn, less seclusive, and more social, as well as more tidy and concerned with their personal appearance. In addition, the less chronically regressed patients became less resistive and irritable, less hostile and profane, more cooperative and oriented for their environment. The chronically disturbed patients responded primarily with improved conceptual thinking, a diminution or masking of perceptual disturbances such as hallucinatory experience and bizarre delusional ideation, increased orientation for self, others, and time, greater congruency between thought and affect, less blocking and more relevant speech, and a decrement in mannerisms and motor bizarreness.

Of the 2 groups showing improvement, the greatest reserpine effects were on the chronically disturbed patients. Since these, the less regressed chronic schizophrenics, and the severely regressed patients differed along a continuum of stabilization, it may be that extent of improvement with reserpine is related to this same continuum.

When the final morbidity scores of reserpine patients were compared with norms, it was found that these, even after treatment, lay at or above the median for hospitalized neuropsychiatric patients. The extent of improvement, then, was not sufficiently great, except for individual subjects, that the bulk of reserpine-treated schizophrenic patients could be eligible for early hospital discharge.

[1] This study was carried out under a grant from the Eli Lilly Pharmaceutical Company.

[2] From the V.A. Hospital, Battle Creek, Mich.

THE EFFECT OF CHLORPROMAZINE ON THE RETURN RATE OF 250 PATIENTS RELEASED FROM THE ROCHESTER STATE HOSPITAL

BENJAMIN POLLACK, M.D., ROCHESTER, N. Y.

The author has previously reported(1, 2, 3) the effect of treatment with chlorpromazine on over 900 patients in a state hospital. Stress has been placed on the need for psychotherapy and the use of other psychiatric tools to obtain the maximum benefit from this drug. The changes in the environment of the state hospital have also been outlined(4, 6, 7).

A study(5) was made in May 1955 of 150 chlorpromazine-treated patients who were released from the Rochester State Hospital on convalescent care within the preceding year. This group consisted of 50% schizophrenics, 14% involutional psychoses, 13% manic psychoses, 9% psychoneuroses 6% psychosis with cerebral arteriosclerosis, and 14% psychoses due to alcoholism; the remainder were a variety of diagnoses.

Twenty-one per cent of this group had been mentally ill for one year; 22%, 1 to 2 years; 26%, 2 to 5 years; and 31% for over 5 years. The normal incidence of return from convalescent care at this hospital averages, over the years, 35%. In order to test the effect of treatment on this group, the following schedule was used: Treated in hospital and continued while on convalescent care—45%; treated in hospital and discontinued on convalescent care—26%; treated on convalescent care only—29%.

The results of treatment are as follows: Returns from convalescent care of treated patients—5%; returns from convalescent care of untreated patients—30%.

Chlorpromazine markedly reduced the return rate from 30% to 5%. The return rate of patients who had been discontinued from chlorpromazine closely approximated the usual or expected return rate of nontreated patients.

By November 1955 over 1,000 acute and chronic patients, suffering from various psychoses, had been treated in the hospital with chlorpromazine. The results of 250 patients who had been released from the hospital on convalescent care were studied and contrasted with the results obtained in the group previously outlined. Seventy-one per cent of the patients continued to receive treatment with chlorpromazine after their release from the hospital, usually with a maintenance dose of 50 to 200 milligrams daily. In this larger series the relapse rate after a longer period of observation was 7% for the drug-treated group as compared with the smaller series of 150 patients which had a relapse rate of 5% in May 1955. Whereas, in the first series, 30% of those who had discontinued drug treatment had relapsed, 20% did so in the second series. This lower rate is apparently due to the fact that a number of these latter patients continued to take the drug sporadically, whenever they began to feel a return of symptoms.

Apparently paranoid and catatonic schizophrenics demonstrated a good response to continued treatment, with small maintenance doses of chlorpromazine, so that the number of returns of this group was exceedingly small as compared with those who discontinued treatment after leaving the hospital. This was noted to a lesser extent in patients with various affective disorders.

Some of the affective groups, particularly the depressions (manic depressive, depressed and involutional psychosis, melancholia) were treated initially with chlorpromazine and then with combined treatment of this drug and EST. Apparently the drug produces a synergistic action upon the effect of electric shock so that the depression disappears much more rapidly, and it is often unnecessary to give more than 2 to 5 EST. Such patients are then continued on a maintenance dosage of the drug.

The continued use of a small maintenance dosage of chlorpromazine following release from the hospital apparently causes a marked reduction from the expected relapse rate of 35%to one of 5% to 7% as noted in the two series quoted.

Further research with similar large series is necessary to determine whether or not experiences elsewhere over a prolonged period will corroborate the findings noted here.

BIBLIOGRAPHY

1. Pollack, B. Bull. Proc. Staff Conferences, Rochester Genl. Hosp., Jan.-Apr. 1955.
2. ———. Med. Times, **83**: 439, May 1955.
3. ———. Psychiat. Quart., **29**: 439, July 1955.
4. ———. Ment. Hosps., Apr. 1956.
5. ———. Chlorpromazine and Mental Health. Philadelphia: Lea & Febiger, 1955.
6. ———. Changes in the Mental Hospital Resulting from Chlorpromazine Therapy. Presented as an Exhibit at the Seventh Mental Hospital Institute, Washington, D.C., Oct. 3-6, 1955.
7. ———. The addition of chlorpromazine to the treatment program of emotional and behavior disorders in the aging population. Geriatrics. In press.

ABSENCE OF PHENYLKETONURIA IN ADULT PSYCHOTICS

A Survey of 4246 Inmates of a State Mental Hospital

REUBEN M. CARES, M.D.,[1] Kings Park, N. Y.

The rare form of mental deficiency in infancy and early childhood known as phenylpyruvic oligophrenia or Folling's Disease(1) is associated with an error in protein metabolism. There is a failure of normal conversion of dietary phenylalanine into tyrosine. Part of the unmetabolized products excreted in the urine include phenylalanine and ketones such as phenylpyruvic, phenyllactic, and phenylacetic acids. Normal individuals show no phenylpyruvic acid in either urine or blood.

A genetic basis for this metabolic error has been indicated, involving a single autosomal recessive gene. All these aspects have been clarified by numerous investigators, predominently Jervis, who completely reviewed this subject in 1954(2).

In the last few years some encouraging reports on relieving this type of mental deficiency in early life by feeding phenylalanine-free diets have been reported in England(3, 4) and in the United States(5). These reports deal with a small group of children up to 6 years of age. The only study on phenylketonuria in adults is that of Cawte(6), in 1954, from Australia. Three adult males, with positive findings in the urine, were among 436 other mental defectives of all ages. Since these patients were not primarily psychotics, the application of Cawte's findings to adult hospitalized psychotics is doubtful.

To determine the possibility that some forms of psychoses without amentia may have associated phenylketonuria, it was suggested by the National Dairy Research Association that a mass survey be undertaken in a state hospital for the mentally ill. The dairy chemists were prepared to supply phenylalanine-free diets to any positive cases with a view to possible clinical improvement in the psychosis.

The urinary screening procedure on about half the hospital population, as recommended by Jervis(7), was as follows:

Five to 10 milliliters of fresh urine is acidified with 0.1 normal hydrochloric acid (approximately 1 cc.). 5-6 drops of a 2% freshly prepared ferric chloride solution is added. Ketones, including phenylpyruvic acid, produce a green color which develops almost immediately and persists for several minutes.

A confirmatory test for keto-acids is then made. This consists of adding to 0.1 to 0.5 ml. of urine, 1 ml. of a 1% solution of 2-4 dinitrophenylhydrazine in 2 normal hydrochloric acid. A precipitate develops almost immediately. After 10 minutes, 2 ml. of 2.5 normal sodium hydroxide is added. In positive cases this produces a red color suitable for colorimetric quantitative determination. The keto-acids-phenylpyruvic acid or other compounds—can then be differentiated by chromatographic analysis.

Table 1 outlines the breakdown of the tests performed during a 6-month period in the latter half of 1955 in this laboratory.

In 11 instances among the 4,246 patients tested, there was an indeterminate blue-green or gray-green urine reaction with ferric chloride. Only one positive reaction was found in a case of obstructive jaundice. All were negative with the confirmatory dinitro-

TABLE 1

Survey for Phenylketonuria in 4,246 Psychotics

Hospital wing	Sex	Age range	No. of patients	Result
Bldgs. A & B..	Female	Over 60	738	Negative
Group 4-A ...	Female	18-60	2298	Negative
Group 4-B ...	Girls	8-16	28	Negative
Group 2	Boys	6-16	86	Negative
Reception A ..	Male	18-70	450	Negative
Reception B ..	Female	17-75	644	Negative

[1] Director of Clinical Laboratories, Kings Park State Hospital, Kings Park, N. Y.

phenylhydrazine test. Faint green positive reactions of diacetic acid were elicited on the urine of 3 diabetics during a transient acidosis. The Kings Park State Hospital, with an inpatient census of 9,200, has less than 300 adult psychotics who are mental defectives. None of these was found to fit the category of phenylpyruvic oligophrenia.

Four thousand two-hundred and forty-six psychotics—536 males and 3,710 females—from ages 6 to 75, were found negative for phenylketonuria. This survey would indicate that in all forms of juvenile and adult psychosis commonly encountered in a mental hospital, no relationship exists with phenylpyruvic oligophrenia of infants and young children.

BIBLIOGRAPHY

1. Folling, A. Hoppe-Seyl. Z., **227**: 169, 1945.
2. Jervis, G. A. Chap. XVI in Genetics and the Inheritance of Integrated Neurological and Psychiatric Patterns. Baltimore: William & Wilkins, 1954.
3. Woolf, L. I., Griffiths, Ruth, and Moncrieff, A. B.M.J., **64**: 57, Jan. 8, 1954.
4. Bickel, H., Gerrard, J., and Hickmans, E. M. Lancet, **2**: 812, Oct. 17, 1953.
5. Armstrong, M. D., and Tyler, F. H. J. Clinic. Invest., **34**: 565, Apr. 1955.
6. Cawte, J. Med. J. Australia, **2**: 15, July 3, 1954.
7. Jervis, G. A. Personal communication.

TOTAL LOSS OF TEETH IN DREAMS

JEROME M. SCHNECK, M.D.,[1] NEW YORK CITY

Dreams involving loss of teeth occur frequently. Lorand [2] expressed the opinion that for his patient the basic desire was to be a helpless baby because at this level she would be cared for and sex would not be a problem. He believed this is the clue to dreams of this type.

The writer has encountered dreams involving loss of many or all teeth. Apparently the crucial significance is fear of growing old. This alone is not enough for adequate understanding. In 3 examples cited here the dreams occurred when the patients had reached a point of extreme frustration in self-expression. They felt time had gone by without overt evidence of accomplishment of which they believed themselves capable. Actual accomplishment, regardless of merit, failed depressingly in their opinion to match potential.

An attractive 40-year-old woman lost all her teeth. She interpreted this as fear of growing old. At this time she was striving to achieve in organizational activities, to grow intellectually, and to better her marital relationship. It seemed to be an endless struggle.

A 32-year-old man dreamed that all his teeth crumbled and fell out. He interpreted the dream as fear of aging. He felt he was getting older and was a failure. He was little impressed by his real accomplishments. The future looked bleak.

A 35-year-old man also dreamed that all his teeth crumbled and fell out. Marked achievements paled before the feeling that he had not reached greater heights. He was restless and discontent. He feared aging before attaining larger goals.

Realistic concern about dental health may play a role as dream stimulus. It was present in these examples. Loss of many teeth differentiates these dreams from others involving individual teeth. The dreams entail much anxiety. Discomfort continues often on waking. The crumbling of the teeth is of special interest and consistent with pervasive feelings of devastation and anxiety.

Recognition of this peculiar dream with this type of underlying concern helps to differentiate it from other dreams involving loss of teeth. The interpretation appears more significant than the view of general regressive strivings toward the infant role. It is more distinct and instructive therapeutically and theoretically than the latter which pertains to so large a variety of dreams, symptoms, and behavioral trends. To equate toothless old age with symbolic infancy is possible but the psychological conflict outlined above should not escape notice.

[1] Clinical assistant professor of psychiatry, State University of New York, College of Medicine, New York City.

[2] Lorand, S. Psychoanalytic Quart., **17**: 529, 1948.

CASE REPORTS

FATAL ACUTE ASEPTIC NECROSIS OF THE LIVER ASSOCIATED WITH CHLORPROMAZINE

R. N. ELLIOTT, M.D., A. H. SCHRUT, M.D., AND J. J. MARRA, M.D.
PONTIAC, MICH.

A 32-year-old white woman had been consecutively hospitalized in a state institution for 5½ years, her psychiatric diagnosis schizophrenic reaction, paranoid type; the clinical picture characterized by hostility, florid religious delusions, and combativeness. Two courses of EST in 1950 and 1951 resulted in only temporary improvement. The initial physical examination was normal and the patient had never had any significant physical illness. In recent years she had continually required the supervision of semidisturbed wards because of her unpredictable behavior.

On November 21, 1955, she was started on chlorpromazine. The dosage was increased rapidly following the intensive treatment method reported in the literature, with the exception that the dosage was increased every few days rather than daily in order to better observe the patient for improvement. Initially, on November 21, 1955, she received 50 mgm. t.i.d. intramuscularly. Thereafter, the drug was given by the oral route exclusively. By November 29, 1955, the dosage had been increased to 1,600 mgm. daily and was held at that level because of beginning improvement.

At about 7:00 a.m. on December 2, 1955, the patient was noted to have an erythema over the face, chest, and arms, and the drug was stopped. By 10:00 a.m. a diffuse, blotchy, macular erythema had spread over the trunk and to the thighs. Small papules resembling urticarial wheals appeared superimposed on the macular erythema. The temperature was 102° rectally. No localized infection was found on examination. A CBC done on 12-2-55 showed: RBC 4,650,000, Hbg. 85%; WBC 10,300 with 76% PMN's and 4% eosinophils. Pyribenzamine was started. At 4:30 p.m. the same day, the rash was somewhat more extensive. No other change was noted in the patient's condition which appeared to be satisfactory. At 12:30 a.m. on December 3, 1955, she was found dead in bed.

Autopsy revealed hepatomegally with an acute aseptic necrosis of the liver and acute hepatic insufficiency. The lobular architecture was almost completely lost. The central veins and radiating sinusoids were markedly engorged. Individual liver cells showed marked degenerative changes, and often appeared ghostlike in character. A large number of the cells showed fat infiltration. There were zones in which not a single liver cell was recognizable. There was a notable lack of exudate. The portal triads showed occasional collars of lymphocytes about the arterioles, but these were not extensive. Fibrosis and bile duct reduplication were not in evidence. The spleen was considerably enlarged and the sinusoids were congested, but showed no exudate. The significant remaining findings were limited to passive congestion of all visceral organs, pulmonary congestion and edema, and mild brain swelling.

A review of recent world literature revealed several[1] cases of fatal agranulocytosis attributed to Thorazine but only one fatal case of toxic hepatitis. This latter case, reported by A. H. Boardman in England, had become jaundiced before death.

The authors feel the death reported here seems to be associated with chlorpromazine therapy. Whether the large dosage was a factor remains a problem for future study.

AN UNUSUAL COMPLICATION FOLLOWING A SINGLE ELECTROSHOCK TREATMENT

H. M. SCHAPIRE, M.D.,[1] DENVER, COLO.

This memorandum reports an unusual complication of electroshock therapy in a 37-year-old woman with prolonged coma, bizarre neurological findings, and subsequent complete recovery. A review of the literature failed to uncover a similar case.

Mrs. L. R. was admitted to Colorado Psychopathic Hospital on June 30, 1954, because of feelings of despondency culminating in a suicidal attempt in which she drank a small amount of paint and varnish remover.

In her infancy, she had suffered from frequent bouts of high fever associated with convulsions. At age 4 she had spinal meningitis followed by a moderate change in behavior. From that time on her mother overprotected her and made her feel dif-

[1] From the department of psychiatry, University of Colorado Medical Center.

ferent from other children. A pronounced lumbar kyphoscoliosis added to her feelings of inadequacy. She made a borderline adjustment by staying with her parents. In 1947 she had mumps complicated by a period of unconsciousness lasting several days. Her difficulties were intensified when she gave birth to an illegitimate child in 1952. On her father's insistence she married the baby's father but separated from him soon after. Her family failed to support her in this crisis. She became despondent and, in a moment of despair, attempted suicide.

Physical examination on admission was within normal limits except for the lumbar kyphoscoliosis. Patient exhibited tremendous feelings of inadequacy and insecurity with pronounced self-condemnatory trends. Her intellectual functions were impaired, her judgment and insight poor. On the Wechsler-Bellevue scales she achieved an I.Q. of 81. Rorschach findings indicated severe depression and insecurity. Laboratory work revealed a negative blood serology and blood count, urinalysis, fasting blood sugar and NPN within normal limits. EKG and roentgenograms of the chest revealed no pathology.

Clinical Course.—During the first 4 weeks of hospitalization the patient's condition worsened in spite of psychotherapy and medication with Dexedrine. She developed delusions of being dead. She was then started on EST. On July 28, by use of a medcraft machine, she received her first and only electroshock treatment; 20 mg of Anectine was given intravenously and a modified grand mal seizure was obtained with 130 V and 0.5 sec. Oxygen was then given by mask. At 9:00 a.m.—15 minutes after the treatment—patient was awake, restless, and responded when her name was called. At 9:15 she returned to the ward. She kept repeating while jumping up and down: "Please, don't. Let me go, let me go." Her eyes were fixed and she acted as if she could not see. She kept saying: "Don't kill me, I am already dead." She slipped to the floor and rolled around, saying: "I am nothing but dirt, I deserve being on the floor." When I saw her shortly after 10:00 a.m. she was extremely restless, attempting to sit up and showing athetotic movements of hands and feet. She failed to respond when spoken to. Although obviously unconscious her violent movements continued, and she was given .2 gm. of sodium phenobarbital by intramuscular injection. Shortly thereafter she calmed down but remained unconscious. Examination at this time revealed a sluggish pupillary reaction and a positive Babinski sign on the right. At 11:30 a.m. she was seen by a neurological consultant. She was comatose, responding to deep pain only. With this stimulus she moved both arms and legs. Arms and legs were flaccid. Deep tendon reflexes were brisk but equal. Abdominals were absent and there was a doubtful Babinski sign on the right. Cranial nerves were intact so far as could be determined. Optic disks were flat, neck supple. Lumbar puncture yielded clear fluid containing no cells. Total protein was 38 mg.%, sugar 59 mg.%. At 1:30 p.m. the patient's sensorium was unchanged. Limbs now showed an alternating increase in tone which was not constant. When patient was made to sit up she was able to hold her head fairly steady. Deep tendon reflexes were still brisk but equal, abdominals absent and both plantars down. Patient's temperature began to climb and by midnight reached 40.6 degrees. By this time the right plantar reflex had again become positive. On July 29 patient was much worse with high fever and tachycardia. She responded to pin prick. The conjugate movements of her eyes were dissociated. There was rigidity of all limbs, the right more than left, with definite right extensor plantar response. Placed on special nursing, parenteral fluids, and antibiotics, she began to show improvement on July 31 by responding to sounds and movements of people in the room and attempts to speak. By August 3 her speech had become clear but she was hallucinating occassionally. For a few more days she seemed to be slightly confused and expressed great anxiety, particularly at night, but then improved dramatically. By August 16 she was quite cheerful and interested in her appearance. She remained almost hypomanic for the rest of her hospitalization. Skull films taken at this time were negative. An EEG taken August 25 showed disorganized cortical activity and general slowing suggestive of a diffuse cortical disturbance, possibly the result of her early cerebral infection or of her recent coma, but unaccountable on the basis of a single induced convulsion. Neurological examination on discharge was negative except for slightly irregular pupils which reacted rather sluggishly. Patient was discharged on August 31 in much improved condition.

Discussion

This middle-aged patient developed coma associated with rather unusual neurological findings following her first electroshock treatment for a psychotic depression. In view of her complete recovery we must assume that we were dealing with some reversible pathological process, such as transitory anoxia and/or edema. Certain other possibilities described in the literature, fatty embolism, vascular occlusion, intracerebral and subarachnoid hemorrhage, are excluded by the same token. The first- and last-mentioned were also directly excluded by examination of the urine for fat and by lumbar puncture. So far as localization is concerned, it would seem from the symptomatology that we were dealing with a specific irritation of the area between the nucleus ruber, the reticular system, and the hypothalamus. This brain had been previously damaged, probably both by the childhood meningitis and later in life when patient seems to have suffered from mumps encephalitis. The most logical assumption therefore seems to be that we were dealing with a reaction to transitory anoxia and/or edema in a previously damaged brain, precipitated by electroshock treatment.

CORRESPONDENCE

DEFINITIONS

Editor, AMERICAN JOURNAL OF PSYCHIATRY:

SIR: The *Diagnostic and Statistical Manual of Mental Disorders* has brought us order where there was chaos and has given us the fundamental *raison d'être* of diagnosis—the ability to communicate. Section III of the *Manual* goes a little too far, tries to do too much, and the good is partly undone.

Section III proposes additional requirements for the "Recording of Psychiatric Conditions." (Unless one goes to an archaic meaning, the word "conditions" is poorly chosen. We are concerned here with psychiatric *disorders or diseases,* not conditions.)

In this section of the manual we find:

> Therefore, for most conditions [?] a complementary evaluation must be entered in the clinical records. This additional evaluation will consist of the following elements:
> (a) External precipitating stress.
> (b) Premorbid personality and predisposition.
> (c) Degree of psychiatric impairment.

The function of a *diagnosis* is to serve as a *brief* code word for all the complex symptoms and findings in a disease state. Items (a), (b), and (c) certainly belong, where appropriate, in the clinical record, but not in the diagnosis. Suppose we ask our colleague, the internist, what is wrong with a certain patient, and he takes a deep breath and lets forth: "Acute pulmonary reaction due to invasion of the pneumococcus bacilli. External precipitating stress: Went out in the snow without his rubbers. Premorbid physical state and predisposition: advanced age and moderate emphysema. Degree of physical impairment: confined to bed in an oxygen tent.

That is what we are doing. All of this palaver does not make us or our friends any wiser. A diagnosis is a code, not a case history.

I have particular objections to item (a) of the above. The attempt to record and state in a few words the "external precipitating stress" is impossible, unwise, and not good. These are the reasons:

1. One man's stress is another man's meat.
2. The stress recorded is often what would seem to be the stress in the eye of the doctor, and not in the mind of the patient.
3. Stress is always many, many, things.
4. Stress is not *ipso facto* bad. Stress promotes growth as often as it produces injury.
5. What is stress for a patient is invariably related to the dynamics of the illness and his previous life experiences. Removed from context and recorded as a diagnosis, it has no meaning if it is the *real* stress.
6. Other persons—doctors, psychiatrists, lawyers, judges, Army Retirement Board, etc.—get a simplified and incorrect notion about mental illness. They begin to think that if such-and-such stress had not occurred, then the patient would not be sick, which is *false.* It is not a saving argument to say that what is wanted is only to record the stress that "tipped the balance." We so frequently see, especially in the psychotic mental disorders, that the patient is irrevocably heading into illness, no matter what transpires in the environment. The "stress" that brings about the illness is, in the mind of the patient and his relatives, a delusion or distortion. It is a projection outward of his internal conflict, and of the turning point in his illness. We do not want to record delusions in our diagnoses.
7. We lead ourselves and others into erroneous notions of causality—the *post hoc, ergo propter hoc* fallacy.
8. We are kidding ourselves that we know all when we know little.
9. Stress is more often recorded wrongly (incomplete information, inability to know a patient that well, and by reason of all of the above) than rightly.

When the *Manual* is next revised, we should remove these requirements. Section III defeats diagnosis. Silence is golden where ignorance abounds.

PAUL W. DALE, M. D.,
Stamford Hall,
Stamford, Conn.

COMMENT

CESARE LOMBROSO

In the October-December 1955 issue of *Scientia Medica Italica*, appears an article by Benigno di Tullio under the above caption. Di Tullio, who is professor of criminal anthropology in the University of Rome and honorary president of the International Society of Anthropology, wishes to set right a common present-day view that Lombroso's teaching—which, it must be remembered, was based on his studies in the closing decades of the nineteenth century "when biology, psychology, psychiatry, and legal medicine were much less developed than they are today"—is of small value in contemporary criminology. He reminds us that Lombroso "inaugurated the study of the criminal by scientific methods and brought about vast and far-reaching reforms in the fields of penal and prison law"; and holds with those who "maintain that there is no question of decadence of Lombroso's teachings, but rather of an evolution, a process of natural, inevitable adaptation of those teachings to the great developments achieved by the biological and psychological sciences during these last decades."

Relevant to this thesis, di Tullio points to several principal features of Lombroso's teaching. He arrived first of all at the hypothesis of the atavistic nature of crime, whereby certain criminals, "by their manner of thinking and feeling, call to mind the primitive man, incapable of assimilating the products of present-day civilization or of adapting himself, therefore, to the requirements of modern social life."

Again there was the hypothesis of the epileptic nature of crime. Examining vast numbers of common criminals in the prisons of Rome, Lombroso drew attention to the fact that many of them presented epeliptoid traits and that many suffered from epilepsy and epileptic-like crises. He found that criminal impulses were often associated with psychic epilepsy.

Further, on the basis of the frequently observed morbid mental processes in criminals the hypothesis of the degenerative and pathological nature of crime was set up.

Di Tullio comments that in the history of criminology it is common to refer to a Lombrosian phase, an ante-Lombrosian phase, and a post-Lombrosian phase, the latter characterized by the psychological and especially by the constitutional-biological study of the criminal, particularly by the Roman school. The criminal could be understood only through detailed consideration of the individual personality, just as in any other type of human behavior. These studies led to the concept of the constitutional criminal as a direct development of Lombrosian teaching, specifically of his hypothesis of the atavistic, or epiliptoid or psychopathic nature of crime. Di Tullio submits that the nineteenth century Lombrosian views have not lost their value, and that modifications in the evolution of criminology during the post-Lombrosian decades were to be expected and inevitable just as in any of the sciences.

HOC OPUS, HIC LABOR EST

If ever the human race is raised to its highest practical level intellectually, morally and physically, the science of medicine will perform that service.

—DESCARTES

NEWS AND NOTES

Desegregation: A Psychological Analysis.—In a talk last January Dr. Stuart W. Cook, retiring president of the N. Y. State Psychological Association, lamented that foundations and government agencies had failed to provide social scientists with funds to study the process of desegregation in the southern United States. He stated that a golden opportunity was being missed by the social scientists in this respect and a "scientific tragedy of the first order" has been engendered. From his own observations on the small amount of research that has been done on this problem, he noted that desegregation proceeded faster in cities than in rural areas, and in border regions where the proportion of Negroes was smaller than that of whites. He noted, too, that people belonging to some organization with moral and religious allegiances tended to favor it. Individual views on the subject seem to be determined by the reference group to which one belongs.

The cost of segregation often determines whether or not a state will support the Supreme Court decision, since separate white schools will suffer considerably if segregation is continued. The decreasing number of states supporting segregation indicates that it will be less painful to follow in line with the Supreme Court decision than to hold out for separate schools.

Dr. Cook emphasized the difficulty of obtaining accurate reports on the changes in individual opinion which a dislocating process such as desegregation naturally entails.

The Virginia Beyer Memorial Lectures, 1956.—These annual lectures at Springfield State Hospital, Sykesville, Maryland, were given by Dr. Carl Rogers, Professor of Psychology of the University of Chicago, on May 4-5, 1956. The topic of the lectures: Newer Concepts in Nondirective Therapy.

Lafargue Clinic Anniversary.—Dr. Emil A. Gutheil addressed the staff of the Lafargue Clinic in New York City, on the occasion of the tenth anniversary of the founding of the Clinic, March 6, 1956. Dr. Gutheil spoke on "Current Trends in Psychotherapy." The Lafargue Clinic, which serves both adults and children, was the first mental hygiene clinic in the Harlem area of New York City.

The Freud Centenary.—The American Psychoanalytic Association has prepared a special program in commemoration of the centenary of the birth of Sigmund Freud during its annual meeting in Chicago, beginning April 27, 1956. Dr. Ernest Jones will be the guest of honor and an exhibit including books and original manuscripts, documentary material from the Sigmund Freud Archives, and portraits of Freud in sculpture, paintings, sketches, and etchings, together with more than 100 intimate photographs covering all phases of Freud's life, likewise translations of Freud's works in some 25 languages will be on view until May 4.

The formal opening of the exhibit will take place 9:30 a.m., Friday, April 27. Greetings will be extended by Dr. Ernest Jones; Dr. Heinz Hartmann, President of the International Psycho-Analytic Association; Dr. Maxwell Gitelson, President of the American Psychoanalytic Association; Dr. Bertram D. Lewin, Chairman of the Freud Centenary Committee; and Dr. R. Finley Gayle, Jr., President of The American Psychiatric Association. Letters from Miss Anna Freud and Princess Marie Bonaparte will be read.

Motion picture films of Freud will be shown on Friday morning, Friday afternoon, and Saturday morning. A reception in honor of Dr. and Mrs. Jones will be held Friday at 5:00. On Saturday afternoon, there will be a plenary session when Dr. Jones will speak on "Our Attitude to Greatness." Saturday evening, there will be a banquet and dancing.

Conference on Pharmacotherapy.—A Conference on validation of research on pharmacotherapy in mental illness will be held at the Statler Hotel in Washington, D. C., September 22, 1956. It will be sponsored jointly by the National Academy of Sciences-National Research Council, the National Institute of Mental Health, and The American Psychiatric Association, under the leadership of Dr. R. W. Gerard. The Conference will be based on the presentations of several *ad hoc* working groups. Their reports on the methodological, theoretical, and administrative problems involved in evaluating tranquilizing and other drugs, both at preclinical and clinical levels, will be reviewed in committee sessions before the open meeting. Those interested in attending the main conference should write to the Executive Secretary of this project, Dr. Jonathan O. Cole, National Academy of Sciences-National Research Council, 2101 Constitution Avenue, N. W., Washington 25, D. C.

Korzybski Memorial Lecture.—Professor Clyde Kluckhohn of the department of anthropology, Harvard University, delivered the annual Alfred Korzybski Memorial Lecture at the Carnegie International Center, 345 East 46th Street, New York City, April 15, 1956.

Dr. F. J. O'Brien.—The death of Dr. Frank J. O'Brien, an eminent New York child psychiatrist, occurred at his home in White Plains, March 13, 1956. He was 65 year old.

Former associate superintendent of schools in New York City, he was head of the division of child welfare, retiring in the autumn of 1955 after 24 years of service with the New York Board of Education.

Dr. O'Brien was born in Worcester, Massachusetts, received his degree in medicine from the University of Louisville, Kentucky, and a Ph. D. in psychology from Clark University. Holy Cross College in Worcester gave him the degree of Doctor of Education in 1952.

Prior to coming to New York in 1931, Dr. O'Brien had served as medical director of the Louisville Psychological Clinic, and of the Bureau of Mental Health of the Kentucky State Board of Health. He had also been a member of the faculty of the University of Louisville College of Medicine and of the staff of the Louisville City Hospital and other hospitals in that city.

He was president of the American Orthopsychiatric Association in 1939. His interest in child welfare was shown by his many connections with medical and educational organizations dealing with childhood problems. He had been a Fellow of The American Psychiatric Association since 1930.

East Bay (California) Psychiatric Association.—The officers of this society for the year 1956 are as follows: Dr. William Sheehy, Berkeley, California, president; Dr. Louis Bryce Boyer, Berkeley, California, president-elect; Dr. Elinor Harvey, Berkeley, California, secretary; Dr. Ervin Markus, Oakland, California, treasurer; and Drs. Melvin Lipsett, Berkeley, California, Allen S. Mariner, San Leandro, California, Marion Roudenbush, Oakland, California, were elected councillors.

Nathaniel W. Winkleman Dies.—Dr. Winkleman died of thrombosis on February 13, 1956. He had had an unusual training and experience for a member of The American Psychiatric Association.

After graduating from the University of Pennsylvania in 1914 he began training in neuropathology under Dr. Samuel T. Orton, a past president of The American Psychiatric Association, and continued in Europe under Dr. Jakob. He was past president of the American Association for Neuropathology and professor of neuropathology in the Graduate School of Medicine in the University of Pennsylvania. His interest in this field led to his establishing and directing the important department of neuropathology at the Philadelphia General Hospital.

His graduate work in neurology began under Dr. Nonne and led to many appointments. In Philadelphia he was neurologist to several hospitals and head of the department of neurology at Temple University; while in the United States Army he was neurologist to a base hospital in France. He was past president of the Philadelphia Neu-

rological Society and second vice-president of the American Neurological Association.

In Europe he studied psychiatry under Dr. Weygandt and in Philadelphia he was instrumental in bringing together a group of people to found the now-flourishing Philadelphia Psychiatric Hospital.

His students will remember the kindnesses he showed to many people. His later life was saddened by the tragic death of his daughter, but he remained at his teaching, and before his last illness added to the collection of specimens and slides which will help new generations.

Death of Dr. MacEachern.—A pioneer in the field of hospital administration, Dr. Malcolm T. MacEachern of the American Hospital Association, died at his home in Chicago, February 3, 1956, at the age of 74.

Dr. MacEachern was born in Argyle, Ontario, and received his training in medicine at McGill University. He, early in his career, became a diplomate in obstetrics, but after his appointment as head of Vancouver General Hospital his interest turned to the field of hospital administration and standardization of equipment. In 1918 he was invited to join the American College of Surgeons where he began to preach hospital standardization throughout this continent. He personally carried the program of the ACS to hospitals throughout the U. S. where the ACS certificate of approval has now become a standard hallmark. Hospital boards in the United States, South America, and Australia owe a debt of gratitude to Dr. MacEachern, and his campaign has had many far-reaching effects on hospitals directly and indirectly related to the American College of Surgeons. Not the least of these effects is the institution 2 years ago by The American Psychiatric Association of a Mental Hospital Administrator's certificate which establishes the qualifications of its holders to maintain high standards of administration in the hospitals where they hold top-level positions.

The Devereux Dinner.—The annual complimentary dinner given by the Devereux Schools to members of the Association took place on the evening of the first day of the meeting, April 30, in the main dining room of the Union League Club of Chicago.

The guest speaker was Dr. Hans Selye, whose topic, "Stress and Psychiatry," was most appropriate and timely.

The Association is indebted to Miss Helena T. Devereux, Director of the Devereux Schools, for providing this very acceptable addition to the regular program.

American EEG Society Meeting.—The 10th annual meeting of the American Electroencephalographic Society will take place at the Claridge Hotel, Atlantic City, New Jersey, on June 15, 16, and 17, immediately preceding the annual meeting of the American Neurological Association. The scientific sessions will be held Friday afternoon and evening, all day Saturday, and Sunday morning.

The program includes a colloquium on "The History of Neurophysiology," Friday evening, June 15, under the chairmanship of Dr. Alexander Forbes; a symposium on "EEG in the Diagnosis of Coma States," Sunday morning, June 17, under the chairmanship of Dr. Jerome K. Merlis.

The annual banquet will take place Saturday evening, June 16.

Commissioned Reserve Expands.—Dr. Leonard A. Scheele, Surgeon General of the United States Public Health Service, has announced that qualified psychiatrists and other professional health personnel actively engaged in public health practice and preventive medicine are being encouraged to apply for commissions in the Service's expanding Commissioned Reserve.

Expansion of the Commissioned Reserve began 18 months ago in an effort to organize professional health personnel to meet national emergencies at a level which their professional training and experience have fitted them for. Commissioned Reserve officers will be called only for emergency duty to reinforce the staffs of official state and local health agencies and to augment Public Health Service operating staff. No Commissioned Reserve officer will be called to emergency active duty unless he volunteers.

On authority from the Federal Civil Defense Administration, the Public Health

Service is concentrating its attention on the detection and control of diseases associated with major national disasters, on developing a program to assist state and local health departments in emergencies, restoration of basic health services, and on the above-mentioned reorganization of the Commissioned Reserve for rapid mobilization in event of enemy attack or national crisis.

Further information may be obtained about the Commissioned Reserve by writing to the Surgeon General, Public Health Service (DP), Washington 25, D. C.

Norwich (Conn.) State Hospital.—Dedication of the Ruth Seggerman Russell Occupational Therapy Building on the grounds of the Norwich State Hospital took place on Saturday, March 10, 1956.

Speakers during the ceremonies were His Excellency, Abraham A. Ribicoff, Governor of the State of Connecticut; John J. Blasko, M. D., Commissioner, Department of Mental Health; and Ronald H. Kettle, M. D., Superintendent of the Hospital.

Death of Dr. Paul Loewy.—At the age of 67, Dr. Paul Loewy, neurologist and psychiatrist on the staff of the Columbia-Presbyterian Medical Center, died at the Neurological Institute after a brief illness, December 9, 1955.

Dr. Loewy was born in Vienna and graduated in medicine from the University of Vienna. Throughout World War I he was active in various capacities in the Austrian Medical services both at the front and as director of neurological and psychiatric services in base hospitals.

From 1919 to 1925 he was chief resident in the Hospital for Nervous and Mental Diseases under the Rothschild Foundation at the Maria-Theresieu Schloessel in Vienna. With the Nazi invasion he escaped from Austria in 1938 and came to New York City.

In his youth Dr. Loewy studied under both Freud and Adler but did not become a disciple of either. He remained independent of psychological schools.

He was a diplomate of the American Board in both neurology and psychiatry.

The Washington University Child Evaluation Clinic.—This clinic, the first of its kind in Missouri, began operation February 1, 1956. Its purposes are the diagnosis and guidance of mentally retarded children, the training of personnel, and research. The clinic is located in the Renard Hospital in the Medical Center, and is supported by funds from the Children's Research Foundation, the St. Louis Association for Retarded Children, and the United Fund.

Bettye M. Caldwell, Ph. D., research associate in medical psychology and pediatrics at the medical school, has been appointed director of the clinic. Staff members include representatives of all the medical and allied specialties having to do with the retarded child.

National Committee on Alcoholism Annual Meeting.—On the first day of this meeting, at the Hotel Statler in New York City, March 29–31, 1956, an institute on the "skid row" alcoholic was held. The second day comprised a clinic team presentation in the morning and a discussion of other therapies in the afternoon. The final program on the third day consisted of an institute for hospital administrators and seminars for program directors. The address at the annual luncheon was given by Bill W., co-founder of Alcoholics Anonymous.

Louisville V. A. Hospital Institute.—An institute on research in psychiatry was held at the V. A. Hospital in Louisville April 27, 1956. Among the guest speakers in the morning were Dr. Jerome Frank, Johns Hopkins Hospital; Dr. C. H. Branch, Salt Lake City; Dr. Robert Heath, New Orleans; and Dr. Bob Livingston, University of California. In the afternoon 2 round-table conferences were held discussing the material offered by the main speakers in the morning.

Social Work.—The National Association of Social Workers has issued a new journal, *Social Work*, to be published 4 times yearly, beginning with the January 1956 issue. Editor-in-chief is Miss Gordon Hamilton, Professor of Social Work, New York School of Social Work, Columbia University. An editorial message from Nathan E. Cohen,

President of the National Association of Social Workers, describes the aim of the new journal, "to provide its social work readers with serious, provocative, creative, and scholarly articles dealing with various facets of the profession."

Subscription rate is 6 dollars per annum. Business and editorial offices are located at One Park Avenue, New York 16, N. Y.

South African Practitioner.—The first number of this new medical journal is dated December 1955. It is a bi-monthly with a distinguished editorial board. Its advisory editors are professors of the various branches of medicine in the University of Witwatersrand, and an ample list of associate editors represents the specialties as well as general medicine. Neurology is represented by one of the associates. One of the advisory editors is senior lecturer in psychiatry at the University of Witwatersrand.

The *South African Practitioner* is a very personable publication and this first issue holds out promise of being a useful addition to medical literature. It will emphasize particularly the needs of the general practitioner. One of the contributors points out that the general practitioners see 85% of the medical patients of the country but contribute only 5% of the medical literature. They are encouraged to raise this percentage but not without adequate consideration and preparation. The leading article, reprinting from the *Central African Journal of Medicine* an address before the Annual Congress of the Southern Rhodesia Medical Association, points out in valuable detail the pitfalls in medical writing and particularly the common fallacies likely to confuse or mislead the reader.

Appropriately to its central objective the new Journal publishes in front a message from Sir William Osler on the general practitioner taken from *Aequanimitas* together with a portrait by Sargent of "the most sagacious of modern physicians."

The *South African Practitioner* is an independent medical journal published at 202-4 Harley Chambers, Jeppe St., Johannesburg, at 2 pounds 10 shillings per annum. Important papers will carry summaries in French and Portuguese. Dr. Ben Cohen is the editor.

Behavioral Science.—This new journal dated January 1956 will appear quarterly and is the official publication of the Mental Health Research Institute, University of Michigan. Its editors, Franz Alexander, Alex Bavelas, David Easton, Ralph W. Gerard, Donald G. Marquis, Jacob Marschak, James G. Miller, Anatol Rapaport, Ralph W. Tyler and Raymond W. Waggoner are "aware of no present journal with a primary policy of making its pages available to representatives of any field—the humanities, the social sciences, the biological and medical sciences, and the physical sciences—to discuss theory concerning human behavior, and empirical studies clearly oriented to such theory . . . we shall strive to achieve this end." Special emphasis will be placed on contributions relating to research in mental health and disease.

The subscription price is 6 dollars. Address business communications to *Behavioral Science*, Mt. Royal and Guilford Avenues, Baltimore 2, Maryland.

Contemporary Psychology.—The American Psychological Association has initiated a new monthly journal of book reviews in the broad field of psychology and related sciences. Specialized book reviews, formerly appearing in various APA journals, will be concentrated in *Contemporary Psychology*. Edwin G. Boring of Harvard University will serve as editor, assisted by 26 consultants in the field.

Subscription rate is 8 dollars a year. Business correspondence should be addressed to the American Psychological Association, 1333 16th Street, N. W., Washington 6, D. C.

American Society of Group Psychotherapy.—The annual meeting of the American Society of Group Psychotherapy and Psychodrama will take place in the Morrison Hotel, Chicago, in the Hollywood and Constitution Rooms, Friday and Saturday, May 4 and 5, 1956. The incoming president of the Society is Jules H. Masserman. The Moreno Institute announces a demonstration of psychodrama, with group participation, Sunday, April 29, at 8:00 p.m., in the Constitution Room.

BOOK REVIEWS

MYSTERIUM CONIUNCTIONIS. Untersuchung über die Trennung und Zusammensetzung der seelischen Gegensätze in der Alchemie. Unter Mitarbeit ven Dr. phil. M.-L. v. Franz. Erster Teil. By *C. G. Jung.* (Zurich: Rascher Verlag, 1955.)

Any system of thought that makes large autistic use of symbolism offers an inviting field for psychoanalytic study. It is in no way surprising that for several years the field of alchemy should have drawn the close attention of such a genius as Jung's. A previous volume, of some 10 years since, attracted favorable notice from the authoritative student of alchemical history, Sherwood Taylor. The present volume is a further integration with Jung's psychological system, of the more esoteric and quasi-mystical aspects of alchemical thinking. Although the two were closely blended, the critic does well to separate this aspect of alchemy from the technological one whose role in the foundations of modern chemistry is widely acknowledged. With this technological aspect Jung is little concerned. What he is concerned with is the demonstration of the common factors in the symbolic motifs of alchemy with such superficially unrelated processes as those of the contemporary dream; and naturally enough with autistic symbolism of all sorts, since such common factors have long been fundamental to Jung's thinking (collective unconscious).

It would be difficult to overstate the labor of which this work gives evidence in its breadth of view, and thoroughness of documentation. The first two portions (pp. 1-56) are so condensed as to make heavy going for any sort of "general" reader; the remainder moves at a slightly more leisurely pace and seems more effective for so doing. In this respect it bears instructive comparison with Graber's *Schwarze Spinne.* To quote from remarks introductory to this portion: "Today the physician knows that the incest problem appears in many degrees of clarity and at once comes to the surface, as soon as the usual 'foreground-illusions' have been set aside. But for the most part he knows it from the pathological side only, and weights it with the odium attaching to its name, without learning from the evidence of history that the painful secret of the consulting-room is but a minor phase in a problem of universal proportions, which has developed a symbolism of the highest import in the transpersonal areas of religious allegory and the foundations of natural science. . . . The images that dramatize this problem are man and woman; the King and Queen, the Sol and Luna of alchemy. In the following I shall set forth the manner in which alchemy develops the symbolic representations of this supreme opposition."

The closing pages bear a good deal also on mass psychology but such a work is essentially an offering on the history of science and the psychodynamics of pre-scientific thinking. Frankfort, Wilson, and Jacobsen's *Before Philosophy* could well be examined in connection with it. Among clinical psychiatrists its major concern will be for those who have a primary interest in the development of Jung's thinking and teaching, which represents as far-ranging an intellect as clinical psychiatry has fostered.

F. L. WELLS,
Newton Highlands, Mass.

THE PRACTICE OF DYNAMIC PSYCHIATRY. By *Jules H. Masserman.* (Philadelphia: Saunders, 1955.)

This scholarly work is the product of Dr. Masserman's vast experience as a teacher, clinician, and research scientist. It constitutes a thoughtful and comprehensive integration of findings from psychiatry and the social sciences. A good portion of it is concerned with theoretic and descriptive aspects of psychiatry which are an extension of the concepts delineated in his previous work, *The Principles of Dynamic Psychiatry.* This book serves as a foundation for the exposition of technique.

The book is subdivided into 5 sections. Part I consists of principles and methods of conducting a mental examination and enumerates the difficulties and problems confronting the examiner. There is a short but interesting chapter on the most common psychological tests with an elaboration of their rationale. Part II covers, briefly but thoroughly, the various clinical syndromes from a descriptive point of view. Part III contains a number of case studies and communications to illustrate ways of formulating and recording data. Included are methods of rendering reports to referring physicians, of presenting personnel evaluations for job placement to different agencies, and of expressing medico-legal opinions to jurists, attorneys, and insurers. Part IV is a short dissertation on some aspects of dynamic theory which concisely blends the thinking of Freudian and neo-Freudian schools. Part V contains an account of the historical development of psychiatry from its roots in primitive mysticism to present-day psychoanalytic approaches. It is gratifying to find so much material condensed in so few chapters. A review of the functions of the psychiatrist is followed by chapters on the main thesis of the book—the practice of psychiatry. These cover the initial interview, preliminary therapeutic techniques, and the strategy and tactics of therapy. There are chapters on adjunctive approaches, namely, drug narcosis, hypnosis, and group therapy; a chapter on military psychiatry and one on "biodynamics and social issues" that deals with the dynamics of group behavior. An appendix contains miscellaneous items, such as an outline for psychiatric examination, standard nomenclature of mental disorders, data on alcoholism, an undergraduate and postgraduate psychiatric curriculum, and precepts of mental hygiene.

Masserman condenses the dynamic principles of therapy in this sentence: "By every ethical means available (a) make the patient's neurotic conduct seem no longer either necessary or profitable to him and (b) help fill the void of adaptation thus created by encouraging new patterns of achievement that he will eventually adopt as personally and socially preferable to the old." Masserman's philosophic and methodologic leanings favor the school of Harry Stack Sullivan; however, a healthy eclectic tolerance is prevalent throughout the book. Particularly stressed is a system of "biodynamics" that attempts "to correlate and integrate various fields of behavior study." Masserman's experimental work with neurotic animals in which different types of therapy were employed, from drug treatment and electroshock to "social" and "transference" therapy, are of special interest. A valuable part of the book are the short case histories which succinctly and often graphically illustrate the text material.

The book is especially serviceable as a textbook for medical students, as well as for psychiatrists preparing for boards, and those in psychotherapeutic training. More experienced therapists will also find the book valuable as a reference manual and will mine out of reading many precious nuggets not available in any other volume.

The book is worthy of the highest commendation and is recommended as required reading.

Lewis R. Wolberg, M. D.,
New York City.

The Social Welfare Forum, 1953. Official Proceedings, 80th Annual Meeting, National Conference of Social Work. (New York: Columbia University Press, 1953. Price: $5.00.)

This volume contains selected papers presented at the National Conference of Social Work, 1953. The topics range from the broad field of social welfare to more specialized considerations of social work practice and education. Of primary interest to social workers, it contains much of potential interest to allied professions. Clark's report of the President's Commission on Meeting the Nation's Health Needs shows a keen grasp of the numerous social problems related to health needs.

In her paper, "Social Components of Casework Practice," Perlman has re-emphasized for social workers the importance of the dynamics of social reality when social work practice has tended in recent years to be more understanding of the dynamics of the clients' personality. The social perspective, which she presents with great clarity, should interest physicians already familiar with social work; it is also a good beginning for those who wish to understand casework.

Cockrill's paper, "The Interdependency of the Professions in Helping People," should be of particular interest to professional persons in multidiscipline settings. She has drawn upon contributions from medicine, social work, education, nursing, and psychology. She presents the challenge to the professions as "that of learning how to work together in such a way as to be able to bring to bear upon the solution of the problems of the individual and of society, without distorting their unitary nature, the fruits of segmental investigation and the expertness which accrues from specialized functions and the accumulated experience of dealing with specific problems." She suggests ways in which this can be done.

"Psychiatry and Social Work in the Vocational Rehabilitation of Psychiatric Patients" describes the combined approach of a psychiatrist, social worker, and public assistance work in the rehabilitation of 25 clinic patients. The methods used are clearly described and are equally applicable to the rehabilitation of the hospitalized mental patient. This article is of practical value to mental hospital administrators and their social service staff.

Of the numerous articles in this volume, those selected for comment reflect the reviewer's special interest. Others may find topics of equal or greater appeal.

Blanche Parcell,
Chief Social Worker,
St. Elizabeths Hospital.

Breaking Patterns of Defeat: The Effective Readjustment of the Sick Personality. By *Richard L. Jenkins, M. D.* (Philadelphia: J. P. Lippincott Company, 1954.)

Dr. Jenkins has written a very readable textbook dealing with the genesis, typical expression, and treatment of common patterns of defeat. Intended primarily for psychiatrists, psychologists, and social workers. The volume contains exhaustive case presentations of, to mention only a few of the patterns dealt with, the rejected child, the excessively dependent person, and the schizoid and paranoid personalities, together with the author's clinical interpretations and observations.

There is a prologue to this book in the form of a parable: an old philosopher goes out into the world one morning to study human relationships by watching children play together. His wife shouts after him to be sure and bring home some potatoes for dinner. The philosopher goes his way, observing the children who do not play according to the rules, those who make too many rules, and those who will only play by their own self-made rules. He decides that each deviator "had been dominated by some emotion which blinded him—by hostility, by fear or by some faulty pattern which was correctible through his understanding . . . if people would only be philosophical and use their understanding . . ." At this point in his reflections the philosopher finds himself on his own doorstep, smitten with the realization that he has forgotten to get the potatoes.

In this fashion Dr. Jenkins acknowledges the limitations of textbook learning and understanding in dealing with the problems of men. His own manual, compared with the general run of such textbooks, is extremely accessible and to be recommended particularly to persons just beginning their training in the field. But he would probably be the first to admit that such a work is, at best, only an auxiliary

to the prime requisite for success in breaking patterns of defeat—sound clinical training.

ANNE CARNWATH,
Toronto, Canada.

DISEASES OF THE SKIN. Fourth Edition. By *George Clinton Andrews.* (Philadelphia: Saunders, 1954.)

This textbook of dermatology is a worthy successor to the 3 previous editions. Carefully written and well illustrated, it is excellent for practitioners and students, as well as a valuable reference book for dermatologists and for those in other specialties.

The chapters on X-ray, radium, and on skin tumors and their treatment are particularly good because the author is an authority in these fields. The chapter on pruritus and cutaneous neuroses does not measure up to the otherwise high standard of the book, but no textbook that attempts to cover a whole speciality could be excellent in every facet of that speciality.

It is the reviewers' opinion that the influence of the psyche on the skin is a large and important one. The skin is an organ for expressing anger, fear, resentment, and shame. It reacts to so-called nervous tension by itching, and the resultant rubbing and scratching produces lichenification of the skin. In addition to the neuroses having skin manifestations, we also see manifestations of hysteria in mutilations and various self-induced eruptions. Probably the classical example of the skin manifestation of a major psychosis is the condition known as delusions of parasitosis. The sufferers from this deeply-fixed delusion drift from general practitioner to dermatologist to psychiatrist, and are rarely helped by any. There are many skin-manifestations of nervous disorders which could be common research projects between psychiatrists and dermatologists.

NORMAN M. WRONG, M. D.,
University of Toronto.

THE PSYCHOLOGY OF ALFRED ADLER AND THE DEVELOPMENT OF THE CHILD. By *Madelaine Ganz.* (New York: Humanities Press, 1954. Price: $4.50.)

Among the three great dissenters who were students of Freud it seems that Alfred Adler was the least productive writer; moreover, even less was written about his school, during his lifetime and after his death. The literature about Adler and his work being so light, although the experimental studies of his school are continuing, many readers only vaguely familiar with Adler's teachings will appreciate the publication of this apparently new book.

To accentuate the positive values, it seems that the last and largest portion of this book, "The Medico-Pedagogic Councils," is the finest contribution to Alderian practice at present available. The collaboration of the medical and the teaching professions is a relatively unknown practice in this country; to this reviewer, this constitutes not only a real but also a unique contribution of Adler to psychiatry. Teachers are trained in the Adlerian method and, under proper medical guidance, treat the child in the public school. It must be remembered that Adler, differently from Freud and Jung, treated the biological basis of psychiatry as a secondary concern, advancing the social milieu to the foreground. In doing this, he seems to have been eminently successful; for both abroad and in this country, the lay therapists seem to be more numerous than are the practitioners of classical psychoanalysis or "orthodox" psychiatry. The therapeutic considerations are divided into 3 steps: difficulties arising at home—asociality or delinquency (such as aggressiveness or disobedience) or psychopathy (such as headaches, tics, stomach trouble, or "bad habits": enuresia); difficulties arising in school,—setbacks in all or some subjects, or symptomatic problems (as found in "model children or rebellious or apathetic ones); and difficulties arising "out-of-doors,"—delinquency (theft, attacks, etc.). In accordance with these 3 types of difficulties, these cases are interpreted to the educators in the public school.

The third part of the book tells the story of the Adlerian Experimental School or, as it was called in Vienna, the *Individualpsychologische Versuchsschule.* The first 2 parts of the book, by far the smaller in volume, are designed to give the reader unfamiliar with Adler a résumé of the theory. The author probably has not escaped the danger of oversimplification in trying to "explain" Adler's theory in 3 pages. Would Adler or, *e.g.,* his foremost student and friend in this country, Rudolph Dreikurs, interpret neurosis as "a kind of social adaptation, a striving of the individual to affirm himself by means of arrangements and artifices which secure him a permit of freedom from personal responsibility?" Or would Adler actually have stated that "bad habits in children are not yet neuroses?" Would he, the physician, have said that a child "with some weakness of the urinary system" is wetting the bed just "to attract the attention of its parents?"

The decided defect of this book lies in its age: it was published over 20 years ago in French. The present volume is its first translation into English. The translator, Philip Mairet, as well as Professor Pierre Bovet, who wrote the Preface, indicate 2 changes which have occurred since the book was written: Adler's death and the destruction of his school in Vienna by the Nazis. What was meant to be a description of the author's field-trip to Vienna and her clinical observation of Adlerian methods in action is no longer in existence. The book can, therefore, serve as a memorial to Adler and his many students, while the part on "The Medico-Pedagogic Councils" is the most illuminating contribution we have to Adlerian methods in action.

HANS A. ILLING, PH. D.,
Los Angeles, Calif.

DOCTOR OF MEDICINE. By *Irma Gross Drooz, M. D.* (New York: Dodd, Mead & Company, 1950. Price: $3.00.)

This book is the autobiography of a girl fired with the ambition to become a doctor. It is the most important and fascinating story of why anyone should wish to become a doctor that we have yet seen. The narrative traces her aspiration through the coveted M. D. degree and its consequent responsibilities, work, and effort which automatically are a part of the doctorate. The book will cause the physician who reads it, male or female, to reflect over the days when, as a student, the title of M. D. was the most desirable thing in life and its conferment was a long way off. It will make lay persons wish they weren't lawyers, business people, or plumbers. And many a housewife will wish she had followed her inclination toward the medical profession instead of having allowed some sweet fellow to convince her that wielding a broom is just as important.

Dr. Drooz does not overglamorize her profession. She states the problems and the rewards, simply and directly. Her father had wanted her to become a writer. But fortunately for her readers and her patients, she is both writer and doctor. She does not present herself as a pioneering female aggressively pushing her way through a horde of belligerent males. She has achieved her ambition and is delightfully frank about her shortcomings and her accomplishments without boasting or overestimating the latter.

Dr. Drooz's brief but touching description of her personal life is very well done and satisfies the reader that she too, has a "love of her own." The book is written so smoothly and is full of so many surprises that it is difficult to lay aside. Once it has been finished one almost feels there should be a sequel.

The description of the doctor's experiences with obstetrics and pediatrics and her reactions to them makes one wonder how she could ever find psychiatry as satisfying as she obviously does. Perhaps one of the chief requisites for an adequate psychiatrist is to be interested in life from its very inception. Treatment for maladjustment due to mistreatment is important, but prevention should come first.

There is a temptation to describe some of the more poignant scenes but in the retelling one might disturb the order of sequence and spoil the narrative for the reader.

Dr. Drooz quotes a very important part of the address made by Dean McDonald of New York University Medical College to the new students. It is a message that should be remembered by all embarking on any career, whether professional, business, or domestic. It is essentially this: Find the source of information and study the basic principles. Acquaint yourself with the foundation and framework rather than detailed facts. Learn to discriminate between facts and fallacies, and do not get lost in their minute embellishments. Although Dean McDonald's talk is mentioned in the beginning of the book, it could just as well have been mentioned in the end. Happy reading!

L. G. L.

LEE MERIAN GROSSMAN,
New York City.

ANSWER TO JOB. *By C. G. Jung.* Translated by *R. T. C. Hull.* (London: Routledge and Kegan Paul, 1954. Price: 12*s.* 6*d.*)

When Osler delivered his lecture, "Science and Immortality," at Harvard in 1904, he divided human beings, in respect of their religious attitudes, into the three obvious classes—those who believe, those who disbelieve, and those who sit on the fence. It seems safe to assume that Professor Jung does not belong to class 2 (He speaks of "our faith," and is sure that in expressing his personal point of view, as he does in this book, he is speaking also for those "who have had similar experiences."); moreover the range and agility of his mind are so extraordinary that it would be disrespectful and indeed impossible to think that he could belong to class 3.

Whatever his classification, his feat in this book is, taking the story of Job as a text, to apply analytical psychology to the writings of the Old and New Testaments—let the chips fall where they may. Jung knows his Bible, and he proves himself as capable an exegete as any of the theological professionals, if not better. In fact, he does not hesitate to set the schoolmen right on occasion.

His brief essay is instructive, entertaining and humorous—whether he intended that last quality or not. His satirical treatment of scriptural psychology is startling. He is dealing strictly with the Judaeo-Christian system, although he necessarily notes its affinities with and derivations from other and more ancient theocratic doctrines.

Taking the scriptural narrative at its face value he proceeds to an analysis of it in penetrating detail by applying Jungian psychology, pagan mythology, and alchemical theory. There is, for example, an elaborate dissection of the Book of Revelation. St. John, it seems, was having trouble with his unconscious. "His conscious attitude is orthodox, but he has evil forebodings. He might easily have dreams that are not listed on his conscious programme. . . . [He] made every effort to practice what he preached . . . [and to] shut out all negative feelings. . . . But though they disappeared from the conscious level they continued to rankle beneath the surface, and in the course of time spun an elaborate web of resentments and vengeful thoughts which then burst upon consciousness in the form of a revelation. . . . a veritable orgy of hatred, wrath, vindictiveness, and blind destructive fury that revels in fantastic images of terror, breaks out and with blood and fire overwhelms a world which Christ had just endeavoured to restore to the original state of innocence and loving communion with God. . . . that this invasion [from the unconscious into the conscious] is authentic can be seen from the use of pagan mythological material, a most improbable procedure for a Christian of that

time, especially as it contains traces of astrological influence."

But there were mitigating circumstances to help account for the awful utterances of the author of the Apocalypse. "John's problem was not a personal one. It was not a question of his personal unconscious or of an outburst of ill humor, but of visions which came up from a far greater and more comprehensive depth, namely from the collective unconscious." And so it becomes possible to have sympathy for St. John who was the victim of such a grotesque nightmare.

But, to return to Job. Jung considers in detail the relations of the three actors in the drama—Satan, Yahweh and Job—in the miserable warfare of two against one. Satan is credited with cleverness, Yahweh with no virtues, and Job emerges as the only heroic figure. But let us quote the author. "The dark deeds . . . follow one another in quick succession—robbery, murder, bodily injury with premeditation, and denial of fair trial. . . . Yahweh displays no compunction, remorse, or compassion, but only ruthlessness and brutality. The plea of unconsciousness is invalid, seeing that he flagrantly violates at least three of the commandments he himself gave out on Mount Sinai . . . But what is Job's guilt? The only thing he can be blamed for is his incurable optimism in believing that he can appeal to divine justice."

But in the continued persecution of the innocent and helpless victim, a new factor appears, "Something that has never occurred before in world history, the unheard-of fact that . . . a mortal man is raised by his moral behavior above the stars in heaven, from which position of advantage he can behold the back of Yahweh, the abysmal world of 'shards'." The moral stature of Job has towered above that of God himself.

And what is the ultimate sequel, Yahweh, being omniscient, becomes aware of this comparison, unfavorable to himself, and also of the unparalleled baseness of granting Satan *carte blanche* in his nefarious dealings with Job. For this there must be atonement; and the only way, according to Jung's exegesis, is for God to become Man, capable like Job of human suffering. "Yahweh must become man precisely because he has done man a wrong. He, the guardian of justice, knows that every wrong must be expiated, and wisdom knows that moral law is above even him. Because his creature has surpassed him he must regenerate himself." Such, then, is the rationale of the Incarnation.

It will be interesting to note the reactions in the various schools of theological thought to this forthright essay. It is an analysis of the scriptural record in terms of Jungian psychology. As far as the reviewer is able to follow the subtleties of that psychology, the analysis seems quite consistent.

C. B. F.

RECENT DEVELOPMENTS IN PSYCHOSOMATIC MEDICINE. By *Eric D. Wittkower and R. A. Cleghorn.* (Philadelphia: J. B. Lippincott, Co., 1954. Price: $10.00.)

Is psychiatry psychoanalysis? If it is, then it is legitimate to assume that psychosomatic medicine may be equated with applied analysis. This is tacitly assumed in Wittkower and Cleghorn's new volume and is proposed in its opening chapter as a "basic concept" of psychosomatic medicine by analysts MacLeod, Wittkower, and Margolin. In this important orientating chapter a number of "conceptual models" are reviewed briefly but all selected are representative of the views of Freud and his disciples. "We are still," the authors conclude, "in the phase of Freud, who found the models of contemporary biology inadequate to explain the mental phenomena that he observed." Kubie has a chapter on the problem of specificity. Again, it is Freud who brought enlightenment to the "Kraepelinian psychiatrist" and to the psychobiologist. But Kubie finds that psychoanalytic practice yields only a growing conviction that the neurotic process has certain rather constant common origins whereas the neurotic symptom is elusively variable.

Perhaps the book's most comprehensive account of the evolution of the psychosomatic concept is the scholarly historical chapter by Margetts. Only here (with few exceptions) is tribute paid to the other recent contributions of psychiatrically-minded internists, constitutionalists, pathologists, biologists, and philosophers to the growth and understanding of psychosomatic interrelationships. Stewart Wolf's refreshing chapter on experimental research is a stimulating and practical essay in psychophysiology and the example of vasomotor rhinitis with which he chose to illustrate the potentials of this methodology of psychosomatic investigation lost nothing by its disregard of the deeper strata of unconsciousness. Malmo in the chapter following takes up some of the theoretical implications of the parallel lines of research pursued by the analysts and the experimentalists. He deplores the semantic confusion attending the emotion concept and argues in favor of a research program which combines "all objective approaches: clinical, experimental and animal." Just how initially misleading yet finally helpful animal neurophysiology can be in elucidating problems of emotion is discussed by MacLean who pays tribute to Papez' genius in recognizing the role played by the rhinencephalon in the central integration of emotion. MacLean refers to his own experiments on the limbic lobe structures and puts forward the interesting idea that breakdown occurs largely because of a failure of adequate communication between neopallium and the more ancient, differently perceptive, visceral brain. A chapter by Margolin closes Part I of the book and outlines the procedure of anaclitic psychotherapy.

In Part II, Cleghorn reviews the existing evidence for "Freud's speculation that metabolic processes underlie instinctual expressions," and the remainder of the book is a somewhat uneven analysis of the emotional factor in disease of the thyroid, diabetes, obstetrics and gynaecology, rheumatoid arthritis, dermatology, respiratory disorders, cardiovascular disease, gastroenterology, V.D., deformity, battle stress, and the relation between structural and psychotic disturbances. The volume closes with an investigation of social pathology from the able pen of Galdston.

JOHN W. LOVETT DOUST,
Department of Psychiatry,
University of Toronto.

Genetica Medica, Primum Symposium Internationale Geneticae Medicae. Edited by *Luigi Gedda.* (Rome: Edizioni Dell' Instituto Gregorio Mendel, 1954.)

The rapid development of human genetics in many parts of the world is well illustrated in Italy where vigorous promotion is being given by Luigi Gedda. In September 1954 the Gregor Mendel Research Institute was opened in Rome and as part of the inauguration the First International Symposium of Medical Genetics was held. The papers presented at that meeting have now been published in book form and are written in either Italian, French, German, or English, with short résumés in the other 3 languages. Of the 12 longer papers, 3 are in English; of the 18 shorter papers, 2 are in English.

The papers cover a variety of subjects, falling within the general field of medical genetics, such as anomalies of the skeleton, haemolytic disease of the newborn, pernicious anemia, longevity, detection of genetic carriers, and so on. Also included is an English translation of the address of welcome given by the Pope, in which he expresses his interest and approval of research in human genetics.

N. Ford Walker,
University of Toronto.

Symptom und Kausalität. By *F. Llavero.* (Stuttgart: Georg Thieme, 1953.)

Provided he is willing to refrain from asking such crucial questions as "what constitutes a symptom," what is intended by "equilibrium," how "causality is eventuated," and a score or more of similar definition- and concept-soliciting queries, the reader of this work is likely to find it both interesting and informative. It *is* interesting as an exhibition of the metaphysical tanglefoot into which those authors contort themselves who attempt to treat of dynamic processes with statistical data, and who seek to account for psychological phenomena primarily in anatomical-organic terms. Seeking to negate, to deny, or to discredit the formulations of the schools of dynamic psychology, confessedly metaphysical and symbolic, they are forced to invent a new jargon and a unique metaphysic, thus giving rise to a raw and näive mythology. The author avowedly avoids psychoanalytical and psychobiological terms and concepts. His own theory is very simple. Symptoms are but the overt manifestation of the breaking down of the organism's efforts to compensate for a disequilibrium—the latter resulting from the operations of one or several from among a large variety of noxious forces or agents.

In itself this is a simple enough and also a somewhat similiar theory. But the author doesn't merely state it, he elaborates upon it to the extent of 251 pages. And to bolster his thesis as well as to demonstrate how it is validated in numerous nosological instances, he is obliged to premise the existence and operation of *"Sprungphänomen," Eigenschaftssprung," Gefügetransposition," "Vitalsphärekomplex."*

The relationship of these postulated entities the author illustrates with a number of drawings, which perversely enough closely resemble Freud's schematic representation of the composition and relationship of Ego, Id, and Super-ego.

Dr. Llavero's work is also informative in a rather tangential way. He cites many authors, in the main Germanic, who in some way or other share his viewpoint, or support some portion of his thesis or his argument.

The author is primarily an organicist, an anatomico-physiological materialist. He is very much in earnest about, and an enthusiastic proponent of, his own ideas. He is evidently widely read in the authors who share his bias. But he is painfully näive in logic, in semantics, and in the critique of modern scientific thought, as exemplified in the writings of Whitehead, Cassirer, and Weizsäcker. Indeed, one can guage the lopsidedness of his orientation by the men whose works he cites and even more so by those whom he has seemingly neglected.

And yet, and yet! I would strongly commend this book to all who have an interest in the deeper problems of disease, symptoms, etiology, causality, *et al.* For even if I cannot accept the author's premises and thesis, and even though I feel that he is far from the mark, it is to his great credit that he has tackled a great problem, a fundamental one, and one which in this age of miracle drugs and psychosurgery, but few are willing to treat.

Iago Galdston, M. D.,
New York City.

Arbeit und Gesundheit. Tabak: Betrachtungen ueber Genuss- und Rauschpharmaka. By *Kurt Pohlisch, M.D.* (Stuttgart: Georg Thieme Verlag, 1954. Price: $2.85.)

Kurt Pohlisch died recently at the age of 62. He was professor of psychiatry at the University of Bonn and had gained a reputation for his many contributions to the social and psychological aspects of alcoholism and addictions. This, his last book, concerns the vast problems of tobacco smoking. One may wonder, indeed, why so little psychiatric attention has been given to the amazing phenomenon of smoking, a habit which physicians in the eighteenth century proclaimed to be unhealthy and untidy and doomed to die out quickly, but which, nevertheless, gained so rapidly in popularity that it has long surpassed the consumption of alcohol and caffein on a world-wide basis.

The perplexing psychological problem must be seen in the fact that nicotine does not alter mood, consciousness, or performance but exerts its influence on autonomic functions. It is, therefore, not the pharmacology of nicotine but the psychopharmacology of smoking which must interest us and which, consequently, represents the subject of this book. The author offers an extensive analysis of the interaction of a multitude of psychological, pharmacological, and sociological factors. There are highly informative chapters on the mechanics of smoking and nicotine consumption. A psychobiology of smoking is developed which examines the implications of age, sex, and individual disposition. The question of tolerance and adaptation, of dependence and with-

drawal, is discussed in the light of many clinical observations. The analysis of the psychological aspects is comprehensive, avoids customary generalizations, and approaches interpretations against the background of the variety of moments which influence young, middle-aged, and old smokers.

The most original and substantial part of the book concerns that devastating chapter in the history of smoking which unfolded in the decade 1940/1950. The war economy necessitated tobacco rationing for the German civilian population. The loss of the war and the total breakdown of the social and fiscal structure elevated tobacco (*i.e.* cigarettes) to the mighty position of a liquid currency. Cigarettes bought food, coal, furniture and other vital necessities of life. The resulting black market corrupted the conduct of otherwise law-abiding people to an extent which throws a most illuminating light on the severity of the smoking addiction. Still more significant appears the pathological addiction which emerged in prison and concentration camps. Inmates, starved to the danger point, exchanged food rations for bits of cigarettes. These are not single case reports but impressive descriptions of mass behavior which more than justify the psychological and sociological analyses of the author.

Our customary concepts on pathological addiction (drugs, alcohol, etc.) are too narrow to be applied to smoking. The universality of the habit transcends every clinical typology or cultural behavior pattern. Pohlisch introduces the concept of *Genusspharmakon* and elaborates a *Genusskomplex* which represents the psychosomatic sum-total of vegetative, affective, and conditioning components.

This book is highly informative, thorough, and challenging. Pohlisch withstands the temptation to find simple answers. He succeeds in illuminating the complexities of a mass phenomenon of great consequence which is still a stepchild of the behavioral-science parents.

F. A. Freyhan, M. D.,
Farnhurst, Dela.

On Aphasia: A Critical Study. By *Sigmund Freud.* Authorized translation by *E. Stengel.* (New York: International Universities Press, 1953.)

As a translation this is creditable work. Any attempt to translate Freud's use of philosophical concepts is, to say the least, difficult, and especially in this paper, where he does not seem to differentiate between perception, image, concept or idea and uses the word *Vorstellung* in so many different contexts that even a Lockean would be confused.

Stengel's introduction, however, is so full of errors and contradictions that it calls for comment.

Dr. Stengel holds that Freud was stimulated to the study of the subject by a paper by Exner and Paneth (p. x). In a footnote he obligingly gives the date of the paper as 1887. But on page 66 Freud states that he had reported the main contents of this study at the *Wiener Physiologischer Club* (sic) as early as 1886.

That Freud in his book uses the words *Besetzung* and *besetzen* is not sufficient justification to demand consideration for it "as the most significant forerunner of the author's later work" (p. x). These expressions were used by Herbart, Meynert, Bruecke, and practically every physiological psychologist in those days. As a matter of fact, Dorer (M. Dorer, *Die Geschichtliche Grundlagen der Psychoanalyse,* Leipzig, Meiner, 1932, p. 184) based her whole thesis on the similarity of vocabulary between Freud and Meynert.

Dr. Stengel also states "Freud was the first in the German speaking world to subject the current theory of localization to a systematic critical analysis. In challenging both a powerful scientific trend and its most influential representatives he showed himself an independent thinker of considerable courage" (p. x).

This statement is worth some consideration. Freud had the potentiality of genius. But, for this potentiality to become realized, he needed a stimulus. This was provided by his urge to correct some respected father figure—and so his earlier neurological papers were thus "corrections" of Paneth and Fleischl, the *Aphasia* of Meynert, his *Project* of Exner and, finally, his *Studien* of Breuer.

Nor did Freud pick the topic of aphasia out of the clear sky. Just as hysteria was of interest to medical practitioners in those days, aphasia was subject to much investigation by neurologists. Charcot was especially interested in aphasia.

There is something about this study though that is prescient of Freud's later psychoanalytical writings. Not in his stressing psychology for the first time; that, as will be seen in a moment, had been done before him. Freud's study on aphasia shows a departure from his previous method of presentation in that he gives unusually few references to precursors. This is a characteristic that has been evident and commented upon in his later psychoanalytical writings.

On page 83 of his aphasia study Freud makes a very fleeting reference to Ballet (G. Ballet, *Le langage intérieur et les diverses formes de l'aphasie,* Paris, (No publisher), 1886). Since Ballet's book represented the official Charcot view in those days, a short review of it may be of interest.

The first part of the book undertakes to present some psychological aspects of speech disturbances. Ballet stresses the need to connect psychological analysis with clinical observation, that is, the use of both psychological and biological methods. Psychologically, Ballet states, the "word" is a "collective concept" consisting of a "sound image," a "visual-letter image," the "glosso-kinaesthetic" and the "cheiro-kinaesthetic" images or impressions.

The predominant use of any one of these images will determine the kind of aphasia to which one may succumb. Thus people who think predominantly by the "sound image" will experience word deafness; the loss of the "visual-letter image" will result in word blindness, and so on.

In contrast to the then prevailing German localization theories, Ballet stresses the differentiation of these 4 basic types (*Idealtypen*) which, according to him, makes for easy comprehension of aphasia.

Ballet flatly refuses to recognize the existence of anatomical centres in the cerebral cortex that would account for the different forms of aphasia. He feels that the predominance of a specific image in the collective concept of words and thinking is due to psychological reasons: predisposition (*Anlage*) and training (*Ausbildung*).

Though he generally feels that the main forms of aphasia are psychologically determined, Ballet, like Freud, ends by assigning a centre in the cortex for each of the 4 main aphasias, providing both psychological and physiological signs for differential diagnoses.

This short review will be sufficient to point out that Freud was indeed not the first one who attacked the localization theory that was advocated in those days mainly by Wernicke and Meynert, nor was he the first to recommend the investigation of the psychological aspects of aphasia.

In pointing out the similarity between Ballet and Freud on the question of aphasia one does not detract in any way from Freud's scientific accomplishments. Freud moved with his times, and his scientific thinking was characteristic of the *Zeitgeist*. The development of psychoanalysis will make him immortal without the necessity of attributing omniscience to him.

RUDOLPH J. BRANDT,
School of Psychology,
University of Ottawa.

PSYCHOANALYTIC PSYCHIATRY AND PSYCHOLOGY. Clinical and Theoretical Papers. Edited by *Robert P. Knight, M.D.* (New York: International University Press, 1954. Price: $6.00.)

The authors state in the introduction to this book that their chief aim is to present a group effort in "exploring frontier areas of the growing and related fields of dynamic psychiatry, clinical psychology and psychoanalysis."

The first of the 4 sections entitled, "The Present Status of Organized Psychoanalysis in the United States," by Dr. Knight, is important reading for all psychiatrists. Unlike Europe where psychoanalysis remained apart from the general movements in psychiatry and medical schools, it has become a force throughout American psychiatry. This has not taken place without upheavals within both organizations summarized here. The chapter not only gives an excellent history of the psychoanalytic movement in the United States but also shows the importance of its emancipation from European authority, the tremendous impetus given to psychoanalytic training in this country by the emigration of European analysts following the rise of Hitler, and finally the growing pains and breaking up of old patterns. One of the important developments was the establishment as the first analytic training center within a university, of the Columbia Psychoanalytic Clinic in 1945.

Although about half the book will be of special interest to the analytically trained psychiatrist or psychologist because of technical aspects, there is plenty of common ground with general psychiatry, particularly in the 4 papers by Dr. Knight in the clinical section dealing with modern psychoanalytically oriented psychotherapy. These should be a must for residents in training, not only for its sound treatment philosophy but for its enlightenment and stimulation in regard to their own further training.

Dr. Knight is unequivocal in his stand that all sound psychotherapy is based on dynamic psychology (psychoanalytic principles) with which the reviewer would heartily agree. It is significant that the trend of the young man now in psychiatry is to seek such training to which the Riggs Center is a significant contributor.

After giving a concise explanation of dynamic psychology, he discusses the two chief divisions of psychotherapy: "suppressive" (or supportive) and "expressive" (or exploratory), the latter including psychoanalysis. Dr. Knight finds relatively few patients seeking psychotherapeutic help "are suitable for orthodox [used in the sense of complete] psychoanalytic techniques, but all of them are entitled to the kind of dynamic assessment and appraisal which psychoanalytic knowledge provides."

Dr. Knight shows how appraisal leads logically to setting of tentative goals and finally planning the therapeutic campaign. He introduces the practical application of ego psychology in understandable terms. Some cases will be found to be "inoperable" and only suitable for supportive therapy. However, some support is used in all psychotherapy including full psychoanalysis. "The attempt to explore is also a matter of degree, and has its dosage, its limits in relation to the patient's anxiety tolerance, and its proper sequence."

Dr. Knight calls attention to those tremendously rewarding cases for exploratory psychotherapy among recent decompensations arising out of upsetting life experiences which can be rather rapidly resolved with a minimum of resistance and transference manifestations. Such cases, however, are rare and in most expressive therapy it is necessary to pay attention to such phenomena as transference, counter-transference, defense, and resistance. Necessary definitions and the maneuvers generally required before making interpretations are reviewed in a way to interest the psychiatrist and psychoanalyst alike.

The same can be said for the discussion of "borderline" cases in which schizophrenic features are the common denominator. Here the author continues his emphasis on the importance of appraisal of total ego function for the fine points of diagnosis and for effective treatment along with a useful list of micro- and macroscopic evidences of early psychosis. Development of psychoneurotic and psychotic symptoms side by side is often lost sight of, the recognition of which is most important for treatment.

Dr. Knight borrowing the metaphor of the retreating army from Freud uses it very effectively to clarify this last conclusion. He points out that if the psychoneurotic outposts are attacked, the main body of the ego which has retreated further may become disasterously disorganized instead of being able to regroup, and with new leadership and morale, be

able to return to the psychoneurotic outposts or even to advance beyond them. This degree of recovery may be accomplished by by-passing the neurotic defenses and directly strengthening the hard-pressed main body of the ego defenses and aiding them in new adaptation with a "kind of psychotherapeutic lend lease."

In the clinical section there are useful communications by other authors. Three are reports on individual cases illustrating the application of treatment methods discussed by Dr. Knight. A fourth deals with ego-psychology and contains a section on hypnosis in psychotherapy. The last chapter, "The Dream Specimen of Psychoanalysis," is a technical paper of special interest to the specialist. It represents, as the author states, "advanced exercises in the clinical use of dream interpretation." Dr. Erickson uses the re-analysis of Freud's Irma dream to illustrate "the art and ritual of exhaustive dream analysis." The presentation is a *tour de force* of classical analysis and contains some very penetrating and provoking statements.

In the first chapter of the next section on clinical psychology, David Rapaport shows the developmental relationship and harmony between psychodiagnostics and psychiatry. "Since both clinical (psychiatric) and test studies have serious limitations, they both need each other's supplementation," a statement amplified throughout the book. There is a chapter on testing in research and one on "Content Analysis of the Rorschach."

The theoretical and last section is diverse in subject matter and much is very technical so that only its direction will be indicated. The first 4 papers, including one in the preceding section, all by Rapaport, are very compact and informative, reading like a textbook. They deal with the psychoanalytic theory of thinking, affect, and ego organization founded on Freud's metapsychology with added contributions by the author and others. Two papers deal with hypnosis. Three more popular papers, 2 by Dr. Knight, one on the Kinsey Report, the second on "Determinism, Freedom, and Psychotherapy," and a third by Erikson, "On the Sense of Inner Identity," close the last section.

From the quality of this first volume by the Riggs group, the reader will look forward to the next study of what the authors describe as a report on "the democratic organization of the patient group in a therapeutic community," which they plan to include in a second volume.

GEORGE E. DANIELS, M. D.,
New York City.

THE CEREBROSPINAL FLUID. By *S. Lups and A. M. F. H. Haan.* (Amsterdam and New York: Elsevieer, 1954. Price: $9.50.)

This monograph, devoted to the study of the cerebrospinal fluid, is based upon a review of the literature and the personal investigations of the authors at the laboratory of the Neuro-Psychiatric Clinic of the State University at Utrecht (Holland).

The first section, a review of the physiology of the cerebrospinal fluid, is rather disappointing in that the work of the last 10 years by many investigators using isotopic and other methods has been largely ignored. The traditional views of cerebrospinal fluid formation and the blood-fluid barrier are presented, but unfortunately, the material is now somewhat outdated.

In the second section, there is a review of the techniques, indications, and contraindications for puncturing the subarachnoid space. Many clinicians would disagree with the indications the authors present for suboccipital puncture. The use of forced spinal drainage in the treatment of bacterial and viral infections of the meninges, no longer used in American clinical practice, is also described and recommended by the authors.

The third section of the book is devoted to the changes in various disease states. These changes are briefly summarized but the authors do not present detailed information as to the incidence and frequency of these changes. There is a very heavy emphasis on various colloidal reactions in neurological diagnosis. Many of these tests are not used in American clinical practice because of their relatively nonspecific nature. Most of the illustrations in the book are devoted to diagrams of these colloidal tests. The occurrence of a low spinal fluid sugar in sarcoidosis and carcinomatosis of the meninges is not mentioned.

The last section of the book is devoted to laboratory methods used in studying the spinal fluid. To those interested in the use of the various colloidal tests this is a useful compendium of such laboratory procedures.

The monograph has many references to the European literature which will prove useful to those interested in the cerebrospinal fluid. While its usefulness in American clinical practice is rather limited, the book is an addition to a reference shelf on this subject.

ROBERT A. FISHMAN, M. D.,
Neurological Institute,
Presbyterian Hospital,
New York City.

THE PSYCHOLOGY OF THE CRIMINAL ACT AND PUNISHMENT. By *Gregory Zilboorg, M. D.* (New York: Harcourt, Brace and Company, 1954.)

The theme of this book is stated in the Foreword: ". . . It is a small book, and it is far from doing full justice to the immense problem of love and hate as they are combined, refracted, and confused in the conflict which still exists after so many centuries between law and psychiatry."

Near the beginning, the author quotes an example from Oliver Wendell Holmes who discusses the conflict between the determinism of science and the concept of free will. Zilboorg, however, does not regard the conflict as a clash of determinism versus free will, according to this statement (about prosecuting attorneys (p. 92): "No, they are men, simple men within themselves, simply driven into action by a number of their natural propensities. I do not mean to say they are automatons, purely mechanistic products of a deterministic world. They

are free men with free consciences and free wills—all enmeshed in the tangle of contradictory human relations and unconscious, potent trends."

The author does not appear to consider determinism versus free will as the essential element of the conflict. In his own words (pp. 6-7): "Here the cleavage between the scientific and nonscientific attitudes towards the law appears not only as a flagrant contradiction but as a true confusion. This confusion does not appear self-evident at first, because the two mutually contradictory attitudes are separated by a considerable span of time, or chain of events. But contradiction there is, and it is an eternal contradiction the solution of which lies apparently in the inner psychology of the problem, and not in its formal logical sequences or semantic hair-splitting. It is my hope that in the course of the considerations which follow some light may be shed on this fundamental contradiction or, as we in our psychological age are wont to say, this fundamental conflict."

Other writers have stated that the clash between free will and determinism is fundamental. Kinberg (J. Crim. Law & Criminol., V. 40, p. 555) has put it clearly: "The theological view followed according to which mental illness was a just retribution for sins. Insane criminals had incurred a "moral guilt" and they had to pay for it by more or less heavy punishment according to the kind of crime. "Moral guilt" implied "free will," or freedom to choose this or that form of behavior. But empirical psychology cannot discover *will*. It finds only single, changing volitions as parts of the stream of total biopsychological events that occur in the minds of men. Free will is thus a baseless concept as a ground for punishment."

"But if there are no reliable tests of 'imputability' and no means of giving a new and practical content to that concept, how is it possible to satisfy the pretended need for the Penal Laws to make a distinction between 'imputable' and 'not imputable,' mentally diseased or abnormal offenders? The answer is that it is not possible. If there are still lawyers who believe, in such a distinction, it is a belief without empirical foundation. When lawyers make great intellectual efforts to find such distinctive traits as could justify this keeping sheep and goats apart it is lost labor."

On the other hand, Zilboorg put the matter quite differently in these words (pp. 14-15); "Please note that I am merely pointing out here the essential fact of the conflict between law and psychiatry. For the time being I do not even attempt to pass judgment on the social or moral validity of this conflict. It suffices for the present to become fully aware of this active, dynamic conflict, which operates incessantly among the various agencies and personalities involved in the discovery, apprehending, trying, and finally pronouncing a verdict over and sentencing of a criminal. In other words, the smoothest machinery of justice suffers from the clogging influences of this psychological conflict."

"Something seems to be in the way. There seems to be some inner obstacle which beclouds the issue in the eyes of the well-meaning lawyer, the humanitarian judge, the judicious physician. It is difficult if not impossible to describe this obstacle in plain words, in plastic detail. All that is possible at this juncture is to illustrate the confusion, and thus inferentially to demonstrate the existence and the enormity of this obstacle."

The author's view of the M'Naghten rules is (p. 10): "The future historian will some day assess the true harm which the McNaghten rule has done to justice as well as to scientific criminology and forensic psychiatry, not only in America but in England as well, and wherever English criminal law is followed."

It is not difficult to comprehend why Kinberg would abolish the M'Naghten rules; the rules would be unnecessary in a system of criminal law based upon scientific determinism.

It is more difficult to follow Zilboorg's reasoning. In discussing the part of the rules that deal with "the nature and quality of the act," the author says (p. 16): "I have never heard or read any definition of the meaning of these words. . . . We must assume that by 'nature of the act' we mean the cruelty, the enormity, the immorality of it. If our assumption as to this moral connotation of the words 'the nature of the act' is wrong, then these words have no meaning whatsoever, not any longer at any rate, if ever they had one."

But these words have been defined by the courts, for example, in Crankshaw's Criminal Code of Canada, 6th Edition, 1935, p. 28: "The words 'the nature and quality of the act' in the rulings of the Judges in answer to the questions submitted to them by the House of Lords in the above case, refer only to the physical character of the act in question, and are not meant to distinguish between its physical and moral aspects. (R. v. Codere, 12 Cr. App. Rep. 21)."

In the chapter on the deterrent effect of punishment, evidence is adduced to show that capital punishment is not a deterrent.

The theme of conflict between psychiatry and the law is pursued in the chapter on differences in professional psychology. The differences are attributed to differences in medical and legal education.

The book suggests that part of the conflict lies in the attitude of prosecuting attorneys and judges. This attitude is portrayed in psychoanalytic terms. A brief quotation will illustrate the method employed (p. 94): "This brings us back to our prosecuting attorneys and sentencing judges who never come to witness an execution which they have been instrumental in bringing about. It is the second component of their ambivalence, their sense of guilt, that keeps them away from the concluding scene of the judicial drama. In this they are unwittingly representing the sense of guilt which hovers in the hearts and minds of all members of our civilized community. This sense of guilt is as integral an element of our psychology of legal justice as the sense of revenge of which I spoke earlier."

The exposition of the motivation of judges and attorneys is controversial. It is probable that many psychiatrists will not agree with the author's conclusions and will entertain doubts as to the validity

of the methods whereby these conclusions are reached.

The Psychology of the Criminal Act and Punishment presents the second series of lectures that won the Isaac Ray Award of The American Psychiatric Association. The high standards set by Dr. Zilboorg in this work and by Dr. Overholser who won the first award augur well for the enterprise.

K. G. Gray, Q. C., M. D.,
Toronto, Canada.

Problems of Consciousness. Transactions of the Fifth Conference. Edited by *Harold A. Abramson, M. D.* (New York: The Josiah Macy, Jr., Foundation, 1955. Price: $3.50.)

This is the fifth and final report of conferences held on Problems of Consciousness under the aegis of the Josiah Macy, Jr. Foundation, and is part of a plan to bring together some of the leading workers and contributors in the field of mental health for intensive personal contact and exchange of ideas. Dr. Fremont-Smith, in his introduction, states that the Foundation looks upon the Conference Program as an experiment in communication. For anyone who has attended similar conferences and conventions and has experienced both the stimulation of direct communication with workers interested in his own field, as well as the many difficulties encountered in a "meeting of the minds" where there is a limitation of time, confusion as to each individual's orientation, and theoretical and background differences, this is a welcome experiment indeed. An informality of approach, and recognition that the members would first have to communicate as persons before they could communicate on subject matter is underscored throughout the report.

This report includes discussion of: Three Dimensions of Emotion, by Harold Schlosberg; Anxiety, by Roy R. Grinker; The Role of the Cerebral Cortex in the Development and Maintenance of Consciousness, by Nathaniel Kleitman; and Aesthetics, by George Robinson. All presentations are brief, given in simple terms, and frequently interrupted by comments from the group. The publication is of necessity but a shadow of the true proceedings as it is impossible to capture the enthusiasm and interest of the live meeting. Although the topic is broad enough to encompass almost everything in the field of mental health and so diffuse as to be loaded with subjective preconceptions, it is nevertheless a subject that cannot be neglected, for the hard fact is that consciousness is our primary tool for appreciating life and experience. The book offers interesting information, struggles with many important questions, and contains some interesting intellectual repartee.

Altogether, the participants functioned at a rather high level of consciousness.

Milton Greenblatt, M. D.,
Harvard Medical School.

Counseling Theory and Practice. By *Harold B. Pepinsky and Pauline Nichols Pepinsky.* (New York: The Ronald Press, 1954. Price: $4.50.)

Although the authors explicitly tell the prospective reader that the writing is for students with interests in clinical psychology, the central problems raised are important to practitioners in psychological medicine, as well as to persons interested in the general area of the behavioral sciences.

It would be unfortunate, indeed, if readers were put off by the rather conventional "scientific" style and method of presentation; for many important insights and queries are tucked away throughout the book. For example, it certainly is important to consider the many implicit assumptions (values and beliefs) that provide the working base for persons trying to effect change in human behavior. In establishing a point of departure for the presentation of what they term a "provisional try" at constructing a useful way of thinking and speaking about (conceptual scheme) the "helping" relation that includes both the person helped and the helper, they set forth the principal implicit, as well as explicit, assumptions of the "accepted" approaches to counseling and psychotherapy. This has been done in a relatively simple straightforward way. In its simple, comparative, and value-free presentation, this section is a distinct contribution.

There are other books that deal more adequately with specific approaches to counseling and psychotherapy, that explore more thoroughly certain of the fundamental problems in effecting change in human behavior; but few other books bring together as much of the evidence or raise as many pertinent questions with reference to the human relationship we call counseling or psychotherapy.

The authors with intention and humility make a distinction between counseling and psychotherapy. This is represented in the title. I think this is unfortunate, for it may restrict the circulation of the book to persons in psychology. Young clinicians in psychological medicine could find the text and bibliography most helpful as they endeavor to think through "what they are doing" in the process of psychotherapy.

Farrell C. Toombs,
Dept. of Psychiatry,
University of Toronto.

The Adolescent Exceptional Child. A Realistic Approach to Treatment and Training. Proceedings of the 1954 Spring Conference of the Child Research Clinic. The Woods School, Langhorne, Pa.

This 80-page pamphlet represents the third in a series of conferences on "The Exceptional Child from Birth through Adolescence." Following the pattern of the 2 earlier conferences, diagnosis, treatment, and training are fully discussed, but in addition, this conference centers attention especially on evaluation and occupational placement of the retarded child with the specific objective of helping

him become a socially accepted, economically adjusted member of the community, capable of depending on his own resources and skills in adult life.

Among the various guest speakers, whose talks are presented in full, are Professor Chris J. De Prospo, of City College, New York, on job opportunities; Dr. Irwin M. Marcus, director of the Child Psychiatry Unit of Tulane University School of Medicine, New Orleans, coordinator of the Florida Center of Clinical Services of the University of Florida, at Gainesville, on techniques for evaluation of the retarded child; and Miss Carmelite Janvier, director of the New Orleans Special Services Division, on school curriculum.

A section of the pamphlet is devoted to a panel discussion on occupational placement of the retarded child from the parent, teacher, and professional points of view.

Both in the individual reports and the concluding panel discussion there is a noticeable optimism concerning the potentials of the exceptional child. This positive orientation is supported by extensive references to follow-up studies and community surveys.

Of particular value to the vocational counselor and educator is Professor De Prospo's conclusion that the personal-social skills are more important for the life adjustment of the mentally handicapped than mechanical abilities.

The cross-sectional representation of the various professional disciplines, industrial personnel and parents' organizations that participated in the discussions serve both to present a holistic approach to the subject as well as to offer information of interest to a wide range of readers.

Copies of the pamphlet are available without charge by writing to the Child Research Clinic of The Woods Schools, Langhorne, Pa.

HERBERT L. FLYNN, M. D.,
Mansfield Depot, Conn.

TEXTBOOK OF OCCUPATIONAL THERAPY WITH CHIEF REFERENCE TO PSYCHOLOGICAL MEDICINE. By *Eamon N. M. O'Sullivan, B. A., M. B., D. P. M.* (New York: Philosophical Library, 1955. Price: $10.00.)

This is an important book that should be read by everyone interested in occupational therapy, and especially by those whose primary responsibility is the care of the mentally ill. It is comprehensive in scope, lucid in style, authoritative in content. The author, who writes from the Mental Hospital, Killarney, Ireland, is to be congratulated on the completeness of the text. From his introductory quotation that "Employment is nature's best physician, and is essential to human happiness" (Galen) to his concluding detailed analysis of specific crafts, he speaks with care and clarity and always with the patient, and not the craft, as the prime consideration. His conclusions are consistent with those of other contemporary writers and conform with current approved curricula for the training of occupational therapists in North America and Great Britain.

There is an excellent history of occupational therapy, a statement of its objectives and value, and a thorough discussion of handicraft, recreational and re-educational forms of occupational treatment. In a succeeding chapter the economic aspects of occupational therapy are carefully and wisely considered. The author then discusses mental illness in an accurate, though abbreviated, manner and offers specific suggestions as to how occupational therapy can assist in the treatment of different disorders. The final 6 chapters offer a detailed consideration of crafts in general, willowcraft, woodcraft, and weaving as tools to help the patient. A good bibliography is appended.

This reviewer offers only one criticism of Dr. O'Sullivan's excellent text, a criticism also voiced by Dr. William Rush Dunton, Jr., in his generally complimentary foreword: those parts of the book which describe the organization of a department of occupational therapy in a mental hospital "are utopian in scope." Although the author emphasizes that the elaborate plans suggested are to be implemented gradually, it is important to underscore this statement. However, this is a minor complaint about a splendid work that should be on the bookshelf of all psychiatrists who employ occupational therapy.

FRANKLIN S. DUBOIS, M. D.,
Silver Hill Foundation,
New Canaan, Conn.

TEXTBOOK OF ENDOCRINOLOGY. Second Edition. Edited by *R. H. Williams.* (Philadelphia: Saunders, 1955. Price: $13.00.)

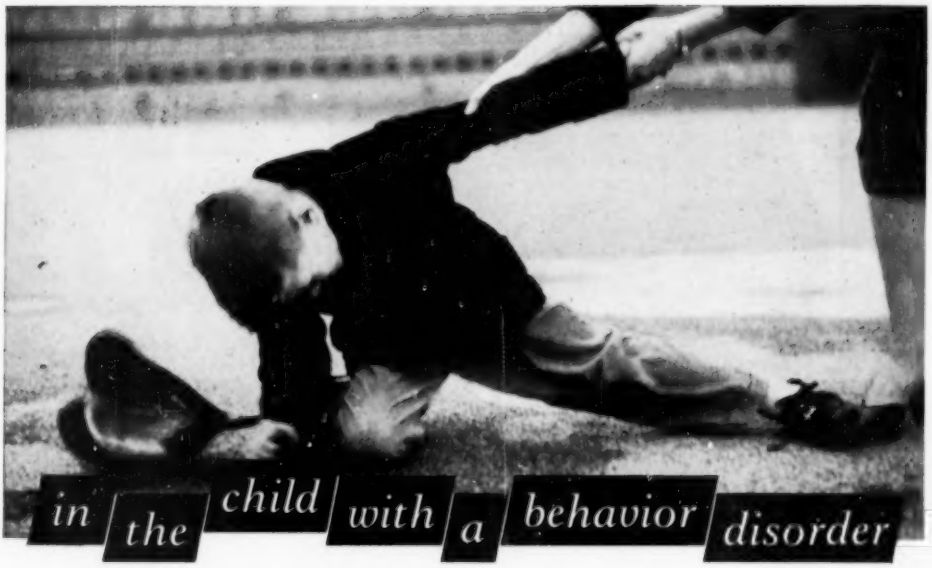
Here is an authoritative presentation of the entire field of endocrinology, written by a group of distinguished investigators, teachers, and practitioners of endocrine medicine. They have prepared a pleasing mixture of theory and practice.

The editor's introductory chapter on the general principles of endocrinology will be of great value to students and to physicians working in other fields. There are other chapters on the pituitary, the thyroid, the adrenals, the gonads, the pancreas and parathyroid glands, which cover a tremendous amount of material. Each chapter discusses the principles underlying the clinical manifestations, diagnosis, and treatment of the disorders of the particular endocrine gland. Considerable attention is devoted to conditions that simulate endocrine dysfunction. These chapters are followed by sections on neuroendocrinology, obesity, laboratory procedures, hormone preparations, and the influence of the endocrines on growth and development. The bibliography is complete enough to guide the interested reader to most original work in any of the subjects covered.

The advantages of multiple authorship are apparent in this book but some of the chapters might have been helped by stricter editing, *e.g.*, metaphors have been mixed freely in the chapter on neuroendocrinology.

Perhaps the book's most attractive feature is its complete coverage of the many recent advances in endocrinology. Anyone wishing to be up to date (for a while) in endocrinology could not do better than to read this book.

C. EZRIN, M. D.,
University of Toronto.



THORAZINE*

reduces hyperactivity and aggressiveness

decreases anxiety and hostility

improves mood, behavior and sleeping habits

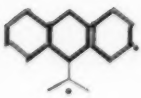
establishes accessibility to guidance or psychotherapy

increases amenability to supervision

FACTS TO BEAR IN MIND Even though the dramatic calming effect of 'Thorazine' on belligerent, overactive children may give the impression of a cure, simultaneous supportive counseling and guidance are necessary if lasting benefits are to be assured.

Adequate 'Thorazine' dosage for certain seriously disturbed youngsters will sometimes exceed 50-100 mg. t.i.d.

'Thorazine' is available in ampuls, tablets and syrup (as the hydrochloride), and in suppositories (as the base).



Smith, Kline & French Laboratories, Philadelphia

*T.M. Reg. U.S. Pat. Off. for chlorpromazine, S.K.F.

"CLEAN, COOPERATIVE, AND COMMUNICATIVE"

Under the influence of Serpasil, patients who had been destructive, resistant, hostile, withdrawn, untidy, or troubled with hallucinations became, in a short period of time, "clean, cooperative, and communicative persons."[1]

Serpasil has been shown to be effective even in violently disturbed psychotics *if sufficiently high dosage is used.* After 6 to 8 weeks of Serpasil therapy in 127 chronic schizophrenics "the result was frequently astounding, even to psychiatrists of long clinical experience."[1]

In similar studies, the worst behavior problems in the hospital showed improvement, chiefly ". . . a reduction of motor activity, of tension, of hostility, and aggressiveness."[2] Many reports have indicated that Serpasil may be substituted for electro- or insulin shock and that it sharply reduces destruction and assaults in the violent back wards.

Adequate trial is essential—a minimum of 3 months, beginning with "parenteral doses of at least 5 mg. of reserpine and continued daily doses of 2 to 8 mg. orally."[1] "The occurrence of the turbulent phase (with exaggeration of symptoms) is *not* an indication for discontinuing treatment."[3]

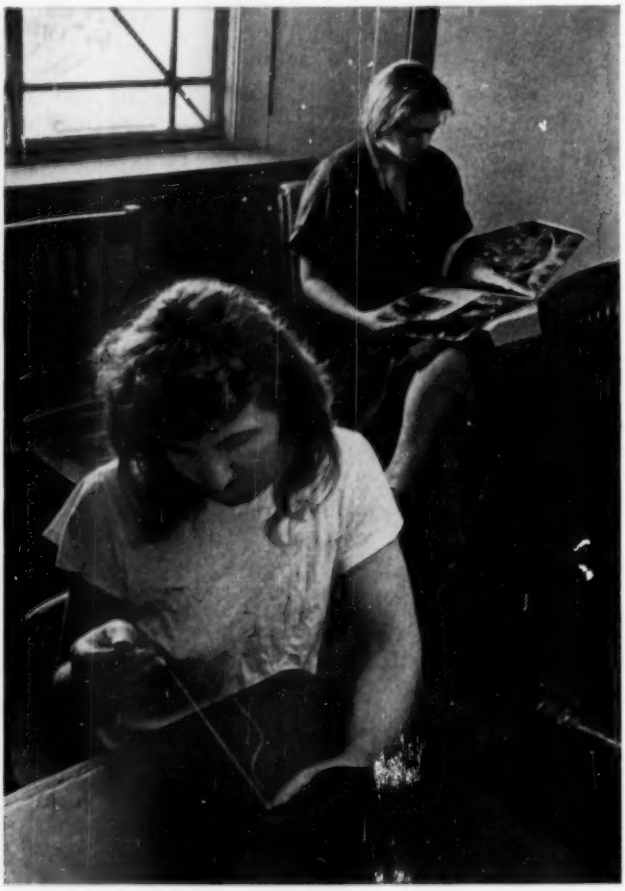
1. Hollister, L. E., Krieger, G. E., Kringel, A., and Roberts, R. H.: Ann. New York Acad. Sc. *61*:92 (April 15) 1955. 2. Hoffman, J. L., and Konchegul, L.: Ann. New York Acad. Sc. *61*:144 (April 15) 1955. 3. Kline, N. S., and Stanley, A. M.: Ann. New York Acad. Sc. *61*:85 (April 15) 1955.

Parenteral Solution, 2-ml. ampuls, 2.5 mg. Serpasil per ml. *Tablets*, 4.0 mg. (scored), 2.0 mg. (scored), 1.0 mg. (scored), 0.25 mg. (scored) and 0.1 mg. *Elixir*, 1.0 mg. and 0.2 mg. Serpasil per 4-ml. teaspoon.

Serpasil®

(reserpine CIBA)

in high dosage for psychiatric patients



CIBA
SUMMIT, N. J.

for a sound sleep tonight, a calm day tomorrow . . .

filmtab®

Nembu-Serpin®

Restful nights are added to calm days for anxiety and mild hypertension patients when you prescribe Nembu-Serpin. The 30 mg. (½ gr.) of short-acting Nembutal (Pentobarbital Calcium) in each tiny Filmtab quickly induces drowsiness at bedtime, followed by refreshing sleep. Then the 0.25 mg. of longer-acting reserpine in each Filmtab calms patients all through the following days.

Patients experience almost immediate relief as Nembu-Serpin's sedative-tranquilizing action rapidly takes effect. Then their sense of well-being increases during the following few days. Nembu-Serpin avoids prolonged waiting for a cumulative response to reserpine.

Small dosages add safety, simplicity, economy for patients. Dosage schedules are simple, medication economical: just one Nembu-Serpin Filmtab at bedtime will calm the worries of most anxiety patients.
Nembu-Serpin Filmtabs—in bottles of 100 and 500. Abbott

® *Film-sealed tablets*

604.161

announcing

THORA-DEX*

a balanced combination of

Thorazine† and Dexedrine‡

'Thorazine':
a specific anti-anxiety agent.

'Thorazine' exerts a selective inhibiting action on functions of the central nervous system, particularly in the sphere of psychomotor and emotional activity. This action promptly produces a new and unique tranquilizing effect which can be described as a detached serenity without clouding of consciousness or impairment of mental faculties. It is this tranquilizing action of 'Thorazine' that makes it effective in the treatment of disorders in which anxiousness, agitation, and tension are present.

'Dexedrine':
a standard antidepressant.

'Dexedrine' has long been recognized as an outstanding antidepressant for elevation of mood in mild depressive states. The symptoms may include vague pains and disorders without apparent organic cause; fatigue; lessened initiative and accessibility; despondency and worry; and a negative attitude towards the world.

*Trademark
†T.M. Reg. U.S. Pat. Off. for chlorpromazine, S.K.F.
‡T.M. Reg. U.S. Pat. Off. for dextro-amphetamine sulfate, S.K.F.

Indications:

In mental and emotional disturbances: 'Thora-Dex' is indicated in a wide variety of mental and emotional disturbances marked by anxiety, agitation, apprehension and depression.

In somatic conditions complicated by emotional stress: 'Thora-Dex' is of value in many somatic conditions, apparently unrelated, but in which emotional stress is a complicating or even a causative factor. With tension, apprehension, anxiety and depression allayed, the clinical picture and prognosis are greatly improved in many somatic conditions.

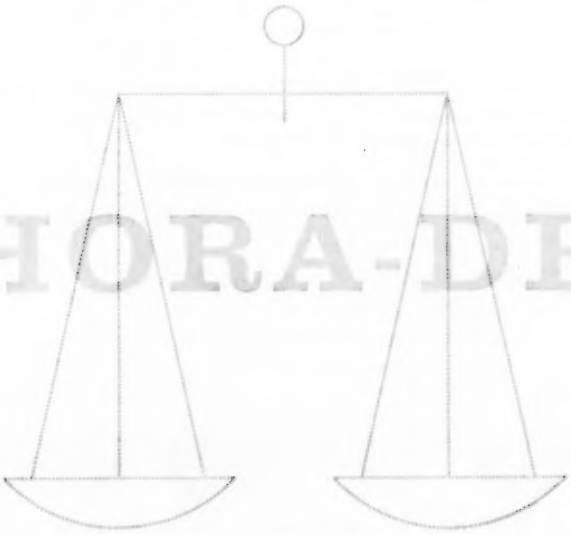
When 'Thorazine' alone causes undesired drowsiness: 'Thorazine' alone sometimes causes drowsiness; while this effect may be desirable in some patients, it may prove troublesome in others. The patient treated with 'Thora-Dex' is generally more alert and assured, with normal interest, activity and capacity for work. For instance, in the treatment of *nausea and vomiting*, especially in ambulatory cases where drowsiness is a problem, 'Thora-Dex' will be found widely useful.

Formula:

'Thora-Dex' Tablets are available in two strengths: 'Thorazine', 10 mg., and 'Dexedrine', 2 mg.; 'Thorazine', 25 mg., and 'Dexedrine', 5 mg.

'Thora-Dex' should be administered discriminately and, before prescribing, the physician should be fully conversant with the available literature on 'Thorazine'.

Smith, Kline & French Laboratories, Philadelphia



'THORA-DEX'

Creating the right attitude...

optimism and cooperation are encouraged by

'Methedrine'® BRAND

Methamphetamine Hydrochloride, COMPRESSED

Subtle improvement in mood and outlook follows oral administration of small doses of 'Methedrine'. This helps carry depressed patients through their troubles, toward normal adjustment.

For those whose troubles stem from eating too much, 'Methedrine' makes all the difference between continual self-denial with consequent irritability, and easy acceptance of a reducing diet; it dispels excessive desire for food.

Literature will be sent on request

'Methedrine' brand Methamphetamine Hydrochloride, 5 mg., Compressed, scored

Bottles of 100 and 1,000

Burroughs Wellcome & Co. (U.S.A.) Inc. *Tuckahoe 7, New York*

WESTERN UNION
SENDING BLANK

CHARGE TO

CHAMBERLIN COMPANY OF AMERICA
1284 LA BROSSE STREET
DETROIT 32, MICHIGAN

PATIENT'S ESCAPE FAILED. PSYCHOSECURITY
SCREEN DAMAGED. RUSH WIRE REPLACEMENT
FOR ROOM 333. URGENT.

HOSPITAL DIRECTOR

PLEASE TYPE OR WRITE PLAINLY WITHIN BORDER—DO NOT FOLD

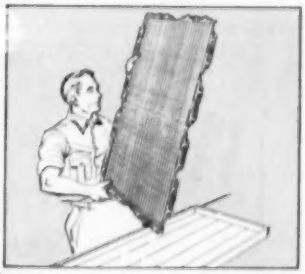
IN ONLY A MATTER OF HOURS CHAMBERLIN ASSURES EXPRESS SHIPMENT OF NEW PSYCHOSECURITY SCREEN PANEL ASSEMBLY. LESS THAN ONE HOUR WITH A SCREW DRIVER COMPLETES SCREEN PANEL REPLACEMENT.

3 CHAMBERLIN SCREENS MEET THESE NEEDS

- **a DETENTION TYPE** — To withstand the fury of violent attack
- **b PROTECTIVE TYPE** — For the less violent
- **c SAFETY TYPE** — For mildly disturbed patients requiring protective custody

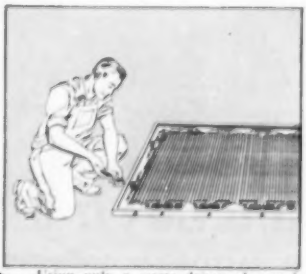
NO OTHER MAKE OF PHYCHOSECURITY SCREEN CAN BE SERVICED OR CLEANED AS EASILY AS CHAMBERLIN.

1 From shop drawings and production schedules a Chamberlin engineer determines size of screen panel replacement.



2 Replacement screen panel with all hardware applied in proper position is shipped by express.

3 When replacement arrives a hospital maintenance man simply removes hinge pins and lays swing section of unit on the floor.



4 Using only a screw driver, damaged screen panel is removed and replaced with a new panel, complete with factory applied springs and clevises.

Get the facts on

CHAMBERLIN
CHAMBERLIN COMPANY OF AMERICA

PSYCHOSECURITY SCREENS
CHAMBERLIN COMPANY OF AMERICA
Special Products Division
1284 LA BROSSE STREET • DETROIT 32, MICHIGAN

CHAMBERLIN INSTITUTIONAL SERVICES also include Mineral Wool Insulation, Metal Weather Strips and Caulking, Metal Combination Windows and Doors, Metal Insect Screens, Aluminum and Fiber Glass Awnings.

ENTER NEW SUBSCRIPTIONS AND RENEWALS ON THIS FORM

AMERICAN JOURNAL OF PSYCHIATRY
1270 Avenue of the Americas, Room 310
New York 20, New York

..... 19 .....
Date

Enclosed herewith is $ ..... for one year's subscription to the AMERICAN JOURNAL OF PSYCHIATRY beginning with Volume ..... Number .....

NAME .....
Print

ADDRESS .....

SIGNATURE .....

Subscription $12.00 a year or by the Volume. Foreign Postage $1.00 extra. (New Volume began July 1955.) Canada and South America Postage $.50 extra.

d is for dawdle

D is for a Devereux School

Here the derivation of dawdling—etymological as well as psychiatric — determines the treatment accorded to this and other symptoms of withdrawal. Dawdling is related, of course, to inner "wandering without goal or aim" (Lowl. Sc. "dandill"). This, however, does not stem from resistiveness or "acting like a mule" (O. Fr. "dandiner"); although it was once thought to do so. Instead, both derive from a common root: "to want to play the infant again" (L. Ger. "dand—").

Thus philology supports the psychiatrist—who, in turn, finds in Devereux Schools a score of homogeneous treatment centers where the classroom and life "en famille" are conscious parts of the therapeutic regimen.

Detailed information is available from

JOHN M. BARCLAY
Director of Development
The Devereux Foundation
Devon, Pennsylvania

Devereux Schools

UNDER THE DEVEREUX FOUNDATION

HELENA T. DEVEREUX, *Director*

Professional Associate Directors

ROBERT L. BRIDGES, Ph.D. — EDWARD I. FRENCH, Ph.D.
MICHAEL B. DUNN, Ph.D. — ROBERT T. GRATTAN, M.D.
J. CLIFFORD SCOTT, M.D.

Santa Barbara, California — Devon, Pennsylvania